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Paper Production Increases During May

Total for the Month is 617,783 Tons as Compared With 580,374 Tons for April, According to Reports Made to the American Paper and Pulp Association and Cooperating Organizations—Total Production of All Grades of Pulp for May Is Reported at 227,185 Tons As Compared With 216,354 for April

Production of all grades of paper in May totaled 617,783 tons as compared with 580,374 tons in April and 607,163 tons in March, according to reports to the American Paper and Pulp Association from members and cooperating organizations. Production for the first five months in 1928 totaled 2,923,640 tons as compared with 2,826,559 tons for the same period in 1927.

Total Daily Average Production

The total daily average production of paper was about 1 per cent below that of April but 8 per cent greater than May, 1927. The increase in total May production over April, despite the lower daily average production, was the result of a greater number of working days in May.

Stocks on hand at the end of May were almost 7 per cent greater than at the end of April and 14 per cent greater than at the end of May, 1927.

Total Pulp Production

Total pulp production for May, as reported by identical mills, was 227,185 tons as compared with 216,354 tons in April and 222,449 tons in March. Total production for the first five months in 1928 was 1,080,472 tons as compared with 1,116,868 tons in the same period of 1927.

The daily average production for May was about 3 per cent below April and 5 per cent below May, 1927. The increase in production in May over that of April was due to a greater number of working days.

Stocks of Pulp on Hand

Stocks of pulp on hand at the end of May were 5 per cent greater than at the end of April, but about 24 per cent less than at the end of May, 1927.

COMPARATIVE REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF MAY, 1928

Grade	Production Tons	Shipments Tons	Stocks on Hand End of Month—Tons
News print	126,010	122,540	37,207
Book	96,587	92,643	57,393
Paperboard	236,914	229,038	50,000
Wrapping	55,690	53,830	55,420
Bag	13,337	13,864	8,935
Writing	32,723	32,629	43,033
Tissue	13,978	13,014	13,373
Hanging	4,523	3,673	3,648
Felts and Building	11,814	12,217	1,621
Other Grades	26,207	25,940	18,943
Total—All Grades—May	617,783	599,438	289,573
April	580,374	567,994	271,480
Five Months, 1928	2,923,640	2,875,719	289,397

COMPARATIVE REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF MAY, 1928

Grade	Production Tons	Used Tons	Shipped Tons	Stocks on Hand End of Month—Tons
Ground Wood Pulp	101,568	90,222	2,738	121,145
Sulphite News Grade	39,223	36,274	1,947	10,272
Sulphite Bleached	25,895	23,878	2,807	2,184
Sulphite Easy Bleaching	3,229	4,198	225	559
Sulphite Mitscherlich	7,357	6,224	1,231	1,002
Sulphate Pulp	25,230	20,972	4,113	6,038
Soda Pulp	24,649	17,315	7,545	4,184
Pulp—Other Grades	34	.....	75	93
Total—All Grades—May	227,185	199,083	20,681	145,477
April	216,354	184,566	22,181	138,056
Five Months, 1928	1,080,472	954,483	109,999	146,035

To Acquire Kimberly-Clark and Spruce Falls

Announcement is made that the Kimberly-Clark Corporation will be chartered under the laws of Delaware to acquire the assets and business of the Kimberly-Clark Company, which holds majority ownership of the Spruce Falls Power and Paper Company, Ltd., the remainder being held by the New York Times Company.

The Kimberly-Clark Company manufactures chiefly book papers for magazines, supplying more than fifty national magazine publishers. Its rotogravure paper is used in about 90 per cent of the United States publications using that product. The Spruce Falls Company, which represents a total investment of $27,000,000, has a long term contract to supply the *New York Times* with its entire news print requirements, accounting for more than 50 per cent of Spruce Falls capacity.

The Kimberly-Clark Company directly and through a subsidiary owns seven plants located at Neenah, Appleton, Kimberly and Niagara, Wis.; and at Niagara Falls, N. Y. Production of paper in 1927 amounted to more than 141,000 tons and for the first quarter of 1928 to more than 38,000 tons. The Wm. Bonifas Lumber Company, a wholly owned subsidiary, has timber supplies estimated as sufficient for more than 25 years operation of the seven plants at present capacity. A large part of the timber on its land consists of hardwood, not used in its own operation, but sold at substantial profits to other industries.

Hawley Mill Gets News Print Contract

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., June 30, 1928.—The Hawley Pulp and Paper mills, Oregon City, Ore., received the contract for the 1929 supply of news print paper for the *Morning Oregonian*, Portland, according to anonuncement of Willard P. Hawley, Jr., manager of the mills, June 27.

Nekoosa Kraft Paper Plant To Be Enlarged

Part of New $3,500,000 Bond Issue Offered By Nekoosa-Edwards Paper Co., Will Be Used for New Construction and Equipment—Capacity Will be Increased to 140 Tons Per Day, From 125 Tons—Earnings of Company Have Increased Steadily Since 1923

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 9, 1928.—Immediate enlargement of the mills of the Nekoosa-Edwards Paper Company, of Port Edwards, Wis., is announced by L. M. Alexander, president, in connection with an issue of first mortgage 5 per cent serial gold bonds totaling $3,500,000.

It is stated that $1,400,000 of first and refunding 6 per cent bonds will be retired so as to reduce interest charges now that the money market is lower. The remainder will be used for new construction and equipment which will enable the company to produce kraft paper only in its mill at Nekoosa, Wis., and will increase the capacity from 125 to 140 tons a day.

This bond issue is secured by fixed assets appraised at $12,000,000. It is the largest issue put out for some time in the paper industry of Wisconsin, and represents the only funded debt which the company has. The security includes a hydro-electric plant of 5,000 h.p. capacity at Wisconsin Rapids, and three other developments which have a present installed capacity of 18,000 h.p.

Net earnings of the company, according to the financial report, have increased from $514,469 in 1923 to $1,173,808 in 1927. The first five months of this year have produced net earnings of $512,699. Average earnings for the period of five years and five months were $738,250 annually.

Human Relations in Industry

Judson G. Rosebush, president of the Patten Paper Company, of Appleton, Wis., and the Northern Paper Mills, Green Bay, Wis., served as chairman last week of the eleventh annual conference on "Human Relations in Industry." The gathering was held at College Camp at Lake Geneva, Wis., under auspices of the Y. M. C. A.

Subjects discussed were: Foremanship training, wage assignments, employee representation, vocational schools, labor turnover, group insurance and old age pensions. Quite a large number of industries were represented and many brought their families this year because of special provisions made for their entertainment.

State Owned Paper Mill Proposed

Establishment of a pulp and paper mill in Wisconsin where the state may employ prison labor is proposed by Dr. E. Stagg Whiten, of New York, executive director of the national committee on prisons and prison labor. He has been making a survey of the state and has been in conference with several members of the legislature, and with Oscar Lee, warden of the state prison at Waupun.

It is Dr. Whiten's idea primarily to use convicts in reforestation work, by having the government acquire cutover or profitless farming lands, and convert these into tree growing areas. Prison labor also could clear lands where needed, it is said.

Then as a followup of this work and as an outlet for the use of forest products, he suggests that the pulp and paper industry be started at the state reformatory at Green Bay, Wis. In order not to bring unfair competition into the market, however, he recommends that state institutions use products of these industries, so far as possible. Wisconsin already has a shoe factory and a twine plant run by penal labor.

No report has been made by the Wisconsin committee on these recommendations and nothing probably will be done until a tour has been made of prisons of western states.

The Hawes-Cooper federal law may stand in the way of a state owned paper mill, because it prohibits shipment of prison made goods from one state to another without plainly marking their source. Prison made products sold on the public market have been reduced from 45 per cent a few years ago to 18 per cent at the present time. It is believed that eventually only such goods will be produced as can be used by state institutions, yet the state desires to solve its problem of prison labor.

Fox River Construction Work

Construction work is proceeding rapidly on the new boiler plant of the Fox River Paper Company, of Appleton, Wis. The foundations have been completed and the superstructure is under way. Within a few days the 200 foot smokestack will be completed. It is built of brick and has the company's name built into the stack by the use of colored brick.

I. P. Co. Developments in Hudson River Valley

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., July 9, 1928.—Great interest is manifested in this region in the reorganization plans of the International Paper Company. The many stockholders of the company in this section have received notification of the reorganization plans as approved by the directors. Marking as it does the entrance of the paper company into the public utilities field on a large scale the plan is of more than usual interest here because of the extensive water power properties owned by the I. P. Co. in the Upper Hudson Valley and Northern New York.

The reorganization plans as made known here call for the formation of a new corporation to be known as the International Paper and Power Company and to be constituted as a Massachusetts trust. The new corporation will acquire for cash from the New England Power Association 46 per cent of the outstanding common stock giving the International ownership of 91 per cent as the I. P. Co. had owned 45 per cent previously.

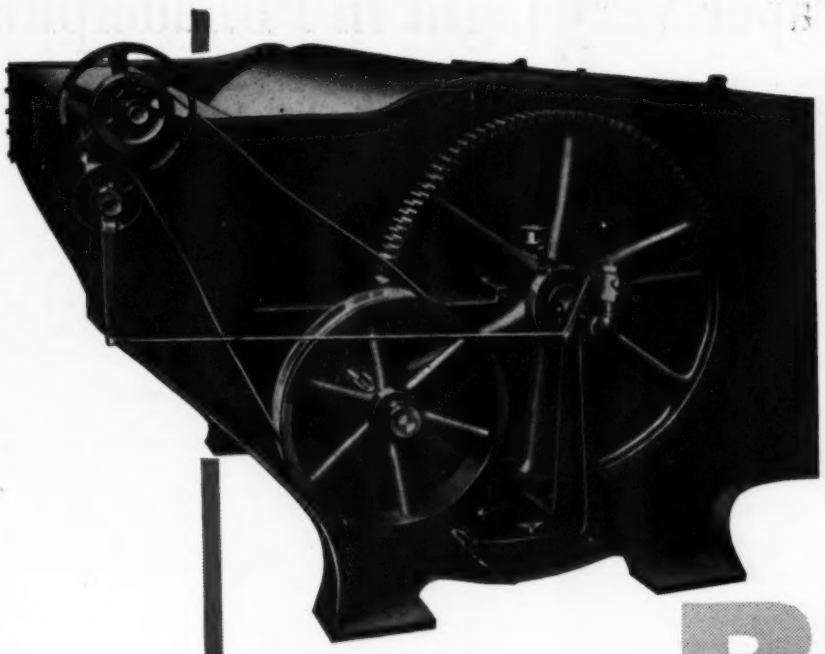
The International Co. through development of its water power sites in the Upper Hudson region will eventually become one of the largest hydro electric producers in up-state New York. The company now owns a huge hydroelectric power plant at Sherman Island which is said to represent an expenditure of $3,000,000. This plant is under lease to the New York Power and Light Corporation. The company owns a one-third interest in the Feeder Dam power plant, being associated in this project with Finch, Pruyn & Co. and the New York Power and Light Corporation. Undeveloped sites at Corinth, Hadley, Fort Edward and elsewhere, all owned by the I. P. Co., have a potential capacity of thousands of horse power.

While nothing is definitely known as to when the company intends to develop the Upper Hudson power it is understood that the company's plans await the completion of the Sacandaga Reservoir. Work on this project is now under way and the dam at Conklingville through operation of which the flow of the Upper Hudson will be regulated will be completed late in 1929, if the contract terms are carried out.

Fairfield Paper Co. Expands

BALTIMORE, Ohio, July 9, 1928.—The Fairfield Paper Company is extending its box factory to provide space for new equipment, and also is adding 100 feet to its paper storage building.

Contract for the construction, which will cost $43,000, has been awarded to the H. K. Ferguson Company of Cleveland, who prepared the plans.



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Demand for Paper Very Light in Philadelphia

Seasonal Lines Needed for Hot Weather Requirements Continue the Bright Particular Feature of the Market—Employment and Wages at Pennsylvania Paper Mills Decreased During May—Paper Box and Bag Mills Included Among Declining Industries

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 9, 1928.—Typically quieter, the holiday markets were productive of no important business developments. The paper trade is passing through the usual doldroms of the summer time and no great activity is to be looked for at this season. There are some orders to be had among the seasonal lines that will be needed as hot weather requirements among the coarse grades and specialties. Apart from this seasonal demand the market is drifting along. While nothing definite has been reported on the first half year's recording of business, it is expected that the summing of accounts will show a fairly well maintained demand despite the duller times in idustry generally. While those dealers handling converted paper report that there has been some increase in demand over the first half of 1927 the general market has been prone to lag.

The Federal Reserve Bank for the Third or Philadelphia District, during the week, sent out a report showing that the paper and printing industry had been subjected during May to declining wages as well as employment. In the thirteen paper and pulp mills reporting there was shown a decrease of 6.7 per cent in May over April, while wages showed a decrease of 1.2 per cent over the April advance of 4 per cent. Paper boxes and bags in the six factories reporting were likewise included among the declining industries in the May schedule, with a 2.1 per cent decrease in employment and 2.2 per cent decline in wages.

As the southern manufacturers of kraft hold to the reductions made in the past month in order to obtain sufficient volume of orders to maintain a summertime operation schedule, the northern manufacturers do not seem inclined to further reduce their products. Two of the northern mills entered the competitive bidding for orders a few weeks ago with a reduction of $10 per ton, but they are advising against speculation on the ground that the cuts are only temporary. Many jobbers in the local trade, however, have been grasping the opportunity to secure the reduced krafts in view of the warning sent out by these northern producers. Of course those distributors who are stocked with kraft are not able to take advantage of the offer and may have to reduce their goods to meet the low prices of the southern made lines that shortly will be received by those able to buy at the recession. These reductions may further disturb the local kraft market after the inventory season, when offerings customarily are made by the jobbers to customers in order to clean up warehouses for fresh Fall supplies.

As the hot weather creates a market for seasonally active stocks there has been a demand for many of the sanitary products, such as cups, napkins, soda and ice cream supplies and outing wares. Glassines and grease proof specialties have also a wider distribution as the thermometer ascends. Tissue papers are steady and builders supplies are holding fairly well. Cheaper grades of wrapping papers and sulphites hold steadily as the mills limit production to the needs of day to day buying. With mills holding off their purchases of paper stock pending a more active market there is very little movement of any of the grades. Book and ledger stocks continue in very good demand but the supplies are at lowest levels of the year, having been consumed in the needs of the springtime. There has been slight recessions in prices.

Paper Trade Hears Frank E. Floyd

By special request of the executive secretary of the National Paper Trade Association, the fine paper dealers linked with the local organization were informed on various topics pertaining to the national policy by the visiting executive. When the fine paper division of the Philadelphia Paper Trade Association met in the Bourse Restaurant at luncheon last Friday, Secretary Floyd was the guest of the local distributors. Simon Walter of the Philadelphia Paper Trade Association presided at the meeting, introducing Mr. Floyd and expressing his appreciation and that of his fellows for the timely visit and the information he conveyed to the dealers.

Quarterly Session of Paper Dealers

Though the quarterly meeting of the Philadelphia Paper Trade Association was a purely routine business session the dealers aligned with the organization turned out in full to the gathering held at the Chamber of Commerce. There was a general discussion of the present market conditions and the reading of the second quarterly reports on the activities of the association. The open forum talks by various members were along the lines of optimistic forecasts for the coming Fall.

George E. Barnes, who for several years has been connected with S. Walter, Inc., is now acting executive secretary of the Philadelphia Paper Trade Association, having succeeded David Kevis, who until his resignation from the sales staff of the company was its corresponding secretary. Mr. Barnes will continue the duties of corresponding secretary until further appointment is made.

Fire Destroys Plant of American Mfg. Co.

Fire which caused damages to the extent of $10,000 was responsible for the destruction of a large quantity of supplies and finished products of the American Manufacturing Company, located at Shunk, Front and Oregon avenues, producers of twines and cords used by the paper trade. The plant of the company is one of the largest down town manufacturing units and occupied an entire city square bordering the water front of the Delaware. The damage was confined to the jute and finished twines and part of the machinery. The spectacular fire brought to the scene every available fire apparatus in the south Philadelphia section and the efficient work of the fire fighters confined the damages and flames to the second floor. The company occupied a recently constructed two story modern structure built for its own use.

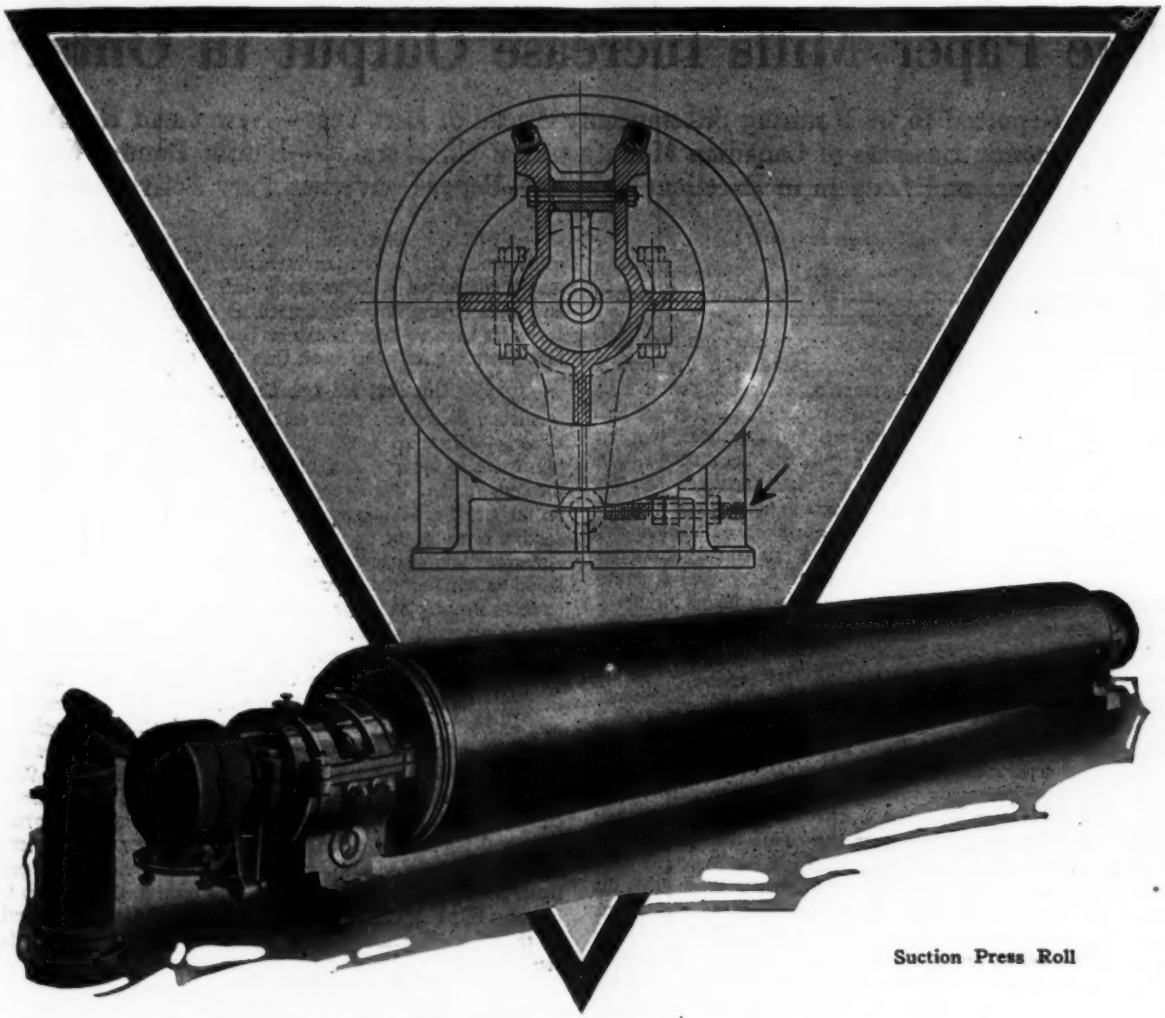
Make Record Shipment

Shipping records of the Scott Paper Company were broken in the month of June, when in the last week the manufacturers of tissues sent 91 carloads, totaling about 40,000 cases aboard a steamer for the Pacific Coast trade distributors. The previous record was 61 carloads, also consigned to the Pacific Coast. Officials of the company in announcing the record consignment stated that business showed a decided increase and that there was evidence of growing demand to continue for the last half of the year. Review of business for the early months of the current year showed a decided increase over the same period of last year. Recently the company reduced the price of its tissues effective as on June 1 and the dealers have been taking advantage of the lowered costs.

New Financing for Hammermill Paper Co.

Announcement was made to the Philadelphia trade that the Hammermill Paper Company, of Erie, Pa., is planning the issuance of a new series of stock to the amount of $5,500,000, in new 6 per cent cumulative preferred stock. The company will provide for the retirement of $2,500,000, 7 per cent cumulative preferred stock, the elimination of $1,500,000 good will from its balance sheet, the

(*Continued on page 34*)



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ALL adjustments are made on the front side of the Kilberry Suction Roll and all can be made while machine is running. The angular position of the suction box can be changed by one man manipulating the nuts on the adjusting screw, indicated by arrow in diagram.

The Kilberry Suction Roll is driven direct from Couch or Press Drive, without gears,—an exclusive, patented feature. The Suction Box is concentric to shell, easily removed and is carried in ball bearings within the steel journals.

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Fine Paper Mills Increase Output in Ontario

Earnings Reported to be Running Substantially Ahead of Last Year—New Tariff Regulations Not Affecting Business of Canadian Manufacturers Unfavorably—Books, Bonds, Writings and Ledgers in Excellent Request—Paper Converters Very Active

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 9, 1928.—Generally firm conditions prevail in the wholesale paper market in Ontario. The situation is viewed with satisfaction by the trade by reason of the fact that despite the entrance of business on the holiday season there has been little retrogression of sales volume. As compared with the present season of last year considerably more paper is being sold now, and at firm prices for the most part, although in such lines as tissues, toilets and some other light weight paper lines, together with some book lines, there has been some keen competition, chiefly from United States dealers and manufacturers. At the moment the importations of foreign papers is not a great factor in the Canadian paper market, with the exception of one or two classes of stock, but there are times when this country furnishes a convenient dumping ground for foreign paper men and this spring has proved no exception to the rule, although decidedly less stuff has been unloaded into Canada this season so far than last. The wholesale paper business in Toronto and district is keeping up remarkably well, with sales in most lines ahead of the corresponding period of last year and conditions less affected by the usual holiday lull than usual.

In the manufacturing field there is well sustained activity in practically all departments, with the exception of news print, uncertain conditions prevailing in that industry. Fine paper mills, however, continue to expand and to increase the volume of their output. Earnings in the fine paper branch of the industry are reported to be running substantially ahead of last year and with definite promise of continued industrial prosperity throughout the current period, this happy state of affairs should be maintained. There was some apprehension for a time that new tariff proposals before the House of Commons would react unfavorably on makers of high grade papers. These involved a drawback on imported paper used by magazine publishers. The form in which the proposals were finally passed, however, is such that it has not affected the business of Canadian manufacturers unfavorably. There is a good demand throughout the province and in the Dominion generally for books, bonds, writings and ledgers and most of the mills are booked ahead. In the case of some of the book mills enough business is booked ahead to keep the plants busy all summer. Coated paper mills, also, are doing a nice business, although it is mostly on current orders, with no very great tonnage booked ahead. The coarse paper market is not as active as had been hoped for this spring. While the wrapping and bag mills are fairly busy, distributors report business a little draggy for the time being. Kraft paper is an exception, both the domestic and export markets absorbing large tonnages. Big plants, such as the Wayagamack Pulp and Paper Company, are running close to capacity under a growing demand for kraft paper and sulphate pulp. Light weight paper manufacturers have orders about two weeks ahead of the machines and demand for tissues, toilets, crepes and specialty lines represent a satisfactory volume of total business. All classes of Canadian-made blanks and blotters are in fair call, although manilas are slightly draggy at the moment.

One of the busiest sections of the trade is that of the paper converters, who are experiencing, in some cases, difficulty in getting delivery of stock. Envelope manufacturers are active and the manufacturing stationers are quite busy. The holiday season has caused very little lull in the paper box industry and the board mills are all busy, with several new plants getting ready to go into production. Rag and paper stock dealers report the market strong with a good demand from the paper mills, especially for paper stock, and collections satisfactory. The pulp situation remains unchanged with generally soft conditions in the market and mills buying only for immediate requirements. Pulp manufacturers have no large stocks on hand and for the most part are manufacturing no more stock than they can conveniently market.

Contract Re Lac Seul Dam Awarded

Announcement was made this week by the Hon. William Finlayson, Minister of Lands and Forests, of the award, on a cost plus basis, to Morrow & Beatty, of Peterboro, of the contract for the construction of a storage dam and power house at Ear Falls, on the Lac Seul-Winnipeg River system. Award of the contract follows close on the heels of the recent joint proclamation by the Ontario, Manitoba and Dominion Governments of special legislation authorizing the gigantic storage project which should mean much to the pulp and paper industry. Decision to proceed with the dam construction comes as a result of Manitoba's need of water storage by fall. The Ontario Government, however, did not proceed before written requests from the Manitoba and Federal authorities, and the Ontario Hydro-Electric Power Commission, counselling haste, were filed at Queen's Park. All engineering details in connection with the scheme will be handled by the Hydro Commission. The cost will run between $500,000 and $1,000,000. Morrow & Beatty, to whom the contract has been given, have just completed a big contract at Kapuskasing in connection with the pulp and paper mill there and with the power development at Smoky Falls. In view of the fact that the Dominion is paying three-fifths of the cost of the Lac Seul project, the Ontario Government felt, said the Hon. Mr. Finlayson, that it should be guided by the former's wishes. Hence the immediate start on the dam's construction.

Superior Mills in Liquidation

Superior Paper Mills, Ltd., which has been in operation a little over a year at Thorold, Ont., are down and in liquidation and will remain closed until reorganization is effected. This is now taking place and it is expected that the outcome will be that the plant will later be devoted to roofing paper manufacture. Superior Paper Mills, Ltd., was organized nearly two years ago but only got into production about one year ago in the manufacture of colored sulphite bonds, toilets and tissues, together with other specialty lines. Local men were the sponsors of the concern and the venture was a money loser pretty much from the first. Several men from other paper manufacturing concerns in the Niagara Peninsula were among the promotors.

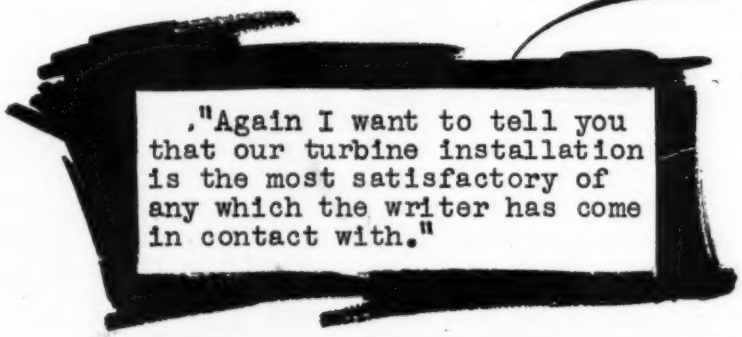
Notes and Jottings of the Trade

The annual picnic of the mill hands of the Don Valley Paper Mills, Toronto, took place on Dominion Day, July 1, at Lakeside Park in Oshawa. The employees made the journey in busses and took with them baskets of provisions. Games and various athletic contests, including some aquatic sports, were on the program and the outing proved a thoroughly enjoyable one.

Despite the fact that there was a decrease of 200,000,000 feet of timber cut on Crown lands in Quebec last winter, or 15 per cent, the cut was above the average for the past ten years, it was learned from Gustave C. Piche, Chief Forester of the province. The cut amounted in all to about 14,000,000 feet of timber, this being on Crown lands alone.

A snap in the link of a chain suspending an 1,800 pound iron ash hopper, crushed the lives out of two men and injured four

The manager of a Large Southern Mill writes this


."Again I want to tell you that our turbine installation is the most satisfactory of any which the writer has come in contact with."

about TERRY PAPER MACHINE DRIVES

—About two 350 HP variable speed units which are installed in one of the largest and most modern kraft mills in the country.

The turbines are designed to operate with steam at 180 lbs. pressure with 40° superheat, and exhaust against 30 lbs. back pressure. The speed of the units is easily varied throughout an 8 to 1 range. The exhaust steam which is used for drying is uncontaminated by oil.

Complete details on a Terry Paper Machine Drive to meet your mill requirements will gladly be furnished. A request on your letterhead will bring you a description of this modern means of operating paper machines. Ask for bulletin S-77.

The Terry Steam Turbine Company

TERRY SQUARE, HARTFORD, CT.
OFFICES IN PRINCIPAL CITIES
Steam Turbines + Gears + Shaft Couplings

T-1020

others who were working beneath it in the Canadian Paperboard Company's new plant on the lake front in Toronto a few days ago. Alex. McDonald, married, aged 28, was killed instantly, while Arthur Dow, single, aged 27, died on admittance to the hospital. The injured men will recover.

The Hinde and Dauch Paper Company, Toronto, continues to expand. The company has acquired a considerable area of ground adjacent to its plant on Hanna avenue, the intention being to build an addition and augment the volume of production of paper board and other lines.

Arthur L. Dawe, manager of Canadian Overseas, Ltd., and former secretary of the Canadian Pulp and Paper Association, has been awarded British patent 286,020 for a new design of paper calender. Mr. Dawe's device provides for a controllable amount of friction between the calender rolls and the surface of the paper, so as to obtain the desired amount of finish. It is stated that the device will be particularly applicable to boards and that it also has interesting possibilities for paper. Word has been received from the United States Patent Office that the patent has been allowed, so that the idea is now thoroughly covered.

A charter has been granted to the Employees' Mutual Benefit Society, Ltd., of Spruce Falls Power and Paper Company, Ltd., with head office at Kapuskasing, Ont. Among the incorporators are John H. Black and George Barber, of Toronto, and S. R. Stilp, E. S. Noble and T. A. Robinson, of Kapuskasing.

A. E. Groff, of the Groff Paper Company, St. Paul, Minn., was a business visitor in Toronto, Ottawa and Montreal during the past few days, while he also renewed old friendships in his native city of Kitchener, Ont.

R. H. Harding, of the Canadian Nashua Paper Company, Peterboro, Ont., called on the Toronto paper trade recently.

George Carruthers, head of the Interlake Tissue Mills, head office, Toronto, has returned from a trip to Winnipeg.

Fred L. Ratcliff, of the Ratcliff Paper Company, took last week off from his desk, and, as a prominent Baptist of Toronto, spent his time with the World's Baptist Alliance, which held its sessions at the Canadian National Exhibition grounds.

O. H. Moore, general manager of the Hinde & Dauch Company, Toronto, following his recovery from an operation, is recuperating at Atlantic City.

Vancouver Kraft Co. Organized

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 9, 1928.—A new company known as the Vancouver Kraft Company has been formed under the laws of British Columbia to acquire, operate and develop properties of the Home Sound Pulp and Paper Company at Port Mellon, B. C., and the Vancouver Kraft Mills, Ltd. The company is now issuing a first mortgage 6½ per cent gold bond issue amounting to $1,250,000.

The new company plans to increase the capacity of the mill, the total production of which will be sold to the Columbia River Paper Mills and the Bates Valve Bag Corporation.

Active control and management of the company will be in the hands of F. W. Leadbetter, one of the best known paper manufacturers on the Pacific Coast.

Zellerbachs May Enlarge Port Townsend Plant

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., June 29, 1928.—An unofficial report is current that the Zellerbach Company may start an addition to the plant at Port Townsend, Wash., for the manufacture of paper boxes and other paper items. The first unit of their new plant has already been completed and the second unit, which was previously announced, will be started within a few weeks, as all details of the construction have been worked out with the exception of actual signing of contracts.

Brown & Bailey Co. Complete Box Factory

PHILADELPHIA, Pa., July 9, 1928.—Work has been completed and occupancy given to the owners for the new office, manufactory and warehouse for the Brown & Bailey Company, manufacturers of folding paper boxes, on the east side of Eighth street, north of Willow street, numbers 817 to 825 inclusive, in accordance with drawings and specifications prepared by The Ballinger Company, architects and engineers, Philadelphia and New York.

Offices of the company are located in the top story, to obtain light and air and greater freedom from street noise. Manufacturing is done in the third, fourth and fifth stories, and basement, first and second stories are used for storage and delivery purposes. A spiral gravity chute is used for conveying the finished product to the delivery platform. Space is provided in the first story for four delivery trucks at one time.

The new building has a frontage of 90 feet on Eighth street and a depth of 131 feet and connects with other properties of the

NEW BUILDING OF BROWN & BAILEY CO.

Brown & Bailey Company. It has five stories and basement and is of reinforced concrete fire-proof construction with brick spandrel walls, cast stone sills and coping. The floors in the several stories have floor finish to suit their occupancy. In the basement, first and second stories the floors are of cement, while in the third and fourth stories they are of maple, the top story being cement with linoleum. Tarred felt and slag waterproofing is used for the roof covering.

Complete plumbing, heating and electrical equipment is installed, also a fire protection system consisting of a 30,000 gallon hemispherical bottom steel gravity tank upon steel supports on the roof for supplying automatic sprinklers throughout the building, with 750 gallon electric fire pump in the basement. An electric freight elevator of large capacity has been installed, also a passenger elevator.

Howard Smith Stock

MONTREAL, Que., July 9, 1928.—The new common stock of the Howard Smith Paper Mills, Ltd., is now being traded on the Montreal Curb Market. This stock, amounting to 200,000 shares, was offered in part as a bonus with the $4,500,000 preferred stock issue.

Peck Carrier

SS-850 Chain for suspending and operating barking drums

"C" Class Combination Chain

"400" Class Chain

"RC" Class Chain for power transmission

Belt Conveyor

>FLINT-RIM< Sprocket

Everything for Handling Materials, and Driving Machinery

EVERY mill should use the new 1088-page Link-Belt General Pricelist Catalog 500, which completely covers in list prices and descriptions, the machinery equipment to keep the mill going. Address the nearest office listed below.

Gears of all kinds

Buckets of all kinds

Friction Clutch

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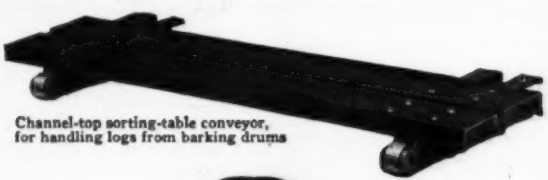
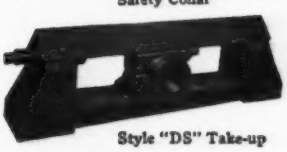


Channel-top sorting-table conveyor, for handling logs from barking drums

Malleable Iron Safety Collar

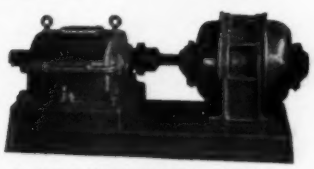
>HEXTOP-< Grease Cup



Style "DS" Take-up

Link-Belt Silent Chain Drive

Link-Belt Crawler



Link-Belt Herringbone Speed Reducer (Sykes tooth form)

Chain Conveyor handling logs

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LINK-BELT

Paper Industry of the U. S. S. R.

The paper industry of the Soviet Union has been making steady progress during the past few years. Production of paper and cardboard by state enterprises during the fiscal year 1926-27 amounted to 306,500 tons, an increase of 8 per cent over the preceding year and of 31 per cent over 1924-25. Including small enterprises not under the supervision of central and regional economic organs the paper and cardboard output totaled 319,300 tons last year. The improvement in the technical condition of the industry is indicated by the fact that the above increases in production were brought about by a labor force only 2 per cent greater than in 1925-26 and 17.7 per cent greater than in 1924-25.

Data for Last Three Years

The following table gives the principal data for the Soviet paper industry for the last three years:

	1924-25	1925-26	1926-27	Per cent Gain 1926-27 Over 1925-26
Number of factories in operation ...	76	87	92	6
Number of machines in operation ..	100	111	118	6
Aver. number of workers during year	26,000	29,900	30,600	2
Gross Output, Metric Tons—				
Paper	212,900	257,300	267,500	4
Cardboard	20,200	26,300	39,000	48
Cellulose	54,600	68,400	75,600	10
Wood pulp	55,500	68,000	73,200	8
Rag, semi-pulp	12,100	12,600	19,900	59

Including technical, administrative and clerical employees the number of people engaged in the paper industry last year was 34,000.

Along with the development of the industry there has been a marked decline in imports. Imports of paper and cardboard in 1926-27 were 107,860 metric tons as compared with 146,520 tons in the preceding year and 147,270 tons in 1913. Expressed in money terms paper and cardboard imports last year amounted to 18,433,000 rubles as compared with 29,171,000 rubles in 1925-26, a decline of 36.8 per cent. Finland supplied 46 per cent of the total imports last year, Estonia 22 per cent, with Germany, Sweden and Norway next in order. The considerable increase in the proportion of imports from Finland over the preceding year, when it amounted to 20 per cent of the total, was due to an agreement concluded between the Finnish Paper Syndicate and the Central Paper Trust (Centroboom) whereby more favorable price and credit conditions were granted to the latter.

Imports Largely News Print

A large part of the paper imports is made up of news print paper. The news print paper imports of the Central Paper Trust, which handled 90 per cent of the total imports last year, were 61,656 metric tons in rolls and 7,787 tons in sheets. The news print rolls imports last year were 15 per cent greater than in 1925-26 due to the increased size and circulation of Soviet newspapers.

Of the total output of paper in the Soviet Union last year wrapping paper made up 31.3 per cent, writing paper 22.2 per cent, printing paper 12.2 per cent and news print paper only 2.4 per cent. This year, however, the program calls for an output of news print of 34,700 tons, a more than five-fold increase over last year. The production of news print paper will make up 11.7 per cent of the total output for this year, which is scheduled to reach 297,000 tons for factories controlled by the Supreme Economic Council, an increase of 11 per cent over 1926-27. For the entire Soviet Union the production program is set at 308,000 tons of paper and 56,000 tons of cardboard. This total of 364,000 tons of paper and cardboard compares with a production in 1913 of 338,000 tons. Production of cellulose is planned at 100,000 metric tons, wood pulp 124,000 tons and sulphite 100,000 tons.

Largest Paper Combine

The Central Paper Trust is the largest paper combine in the Soviet Union. Last year the Trust, which operates 9 establishments and employs over 11,500 workers, accounted for 28.6 per cent of the paper and cardboard production of the country and 82.4 per cent of the cellulose output. The Leningrad Paper Trust operating seven factories with 3,000 employees turned out 16.1 per cent of the paper and cardboard.

The progress made by the paper industry in the past few years is due largely to the considerable capital investments made in the industry. These investments will also make possible a large increase in production in the next few years as several new factories are now under way. Last year about 37,600,000 rubles were expended on capital construction and reequipment. This year the appropriation is 38,200,000 rubles.

Four Large Mills Under Construction

Four large paper mills are now under construction in the U. S. S. R., the largest being the Balakhna mills on the Volga River. The others are the Kondopozh mill on Lake Onega in the Murmansk district, the Syas factory near Leningrad and the Balakhna cardboard factory. These four plants will produce 93,000 tons of newspaper, 13,000 tons of wrapping paper, 13,500 tons of cardboard, 50,000 tons of cellulose and will involve an aggregate capital investment of over 65,000,000 rubles. Three existing mills, the Golodai, Okulovka and Sokol have been reequipped at a cost of 16,700,000 rubles, and their aggregate production capacity will be increased by 52,000 tons of paper and 54,500 tons of wood pulp.

Volga Paper Mills

The Volga paper mills, on which work was started by the Central Paper Trust in 1926, are located on the right bank of the Volga, 5 kilometers from Balakhna in the Nijni-Novgorod district. These mills are designed to produce annually 70,000 tons of paper, including 50,000 tons of news print or about half the requirements of the U. S. S. R., 5,000 tons of wrapping paper and 50,000 tons of cellulose. This plant will be one of the largest in Europe and the mechanical equipment will be of the most modern design. Besides the reinforced concrete industrial buildings with a cubature of 281,000 cubic meters, 118 workers' dwellings containing 433 apartments are being erected. There are over 1,000,000 acres of forest land, mostly pine, in the district and convenient river transportation is available. The first paper machine will be in operation this summer, the cellulose factory in January, 1929, and the second paper machine in the second half of 1929. In 1927 more than 4,000 workers were engaged on the construction of the mills which are estimated to cost 32,000,000 rubles.

Kondopozh Paper Mills

The Kondopozh paper mills are under construction on the shores of Lake Onega near the Murmansk Railroad. The linking of Lake Sanal and Lake Onega by a canal makes it possible to obtain water power for a 35,000 kw. station. Two Swedish turbo-generators have already been installed and German paper machinery ordered. The factory will have an annual capacity of 25,000 tons of news print paper. The steam required for the manufacturing processes and for heating will be supplied from a 3,000 kw. steam power plant for which boilers have been purchased abroad. The mill, of which the estimated cost is 10,000,000 rubles, will be put in operation early next year.

Syas Paper Mills

The Syas mills near Lake Ladoga will supply the northwest district, including Leningrad, with news print and other paper. A cellulose factory with a capacity of 70,000 tons per year was started in 1926 and will be put in operation this spring. The news print paper and wood pulp plants, with eventual capacities of 50,000 and 44,000 tons respectively, will not be completed until 1930-31. The raw material for the mills will be obtained from the neighboring forests which cover over 1,250,000 acres and the fuel will come from the immense peat bogs in the district. Dwellings to house the employees of the cellulose factory are being

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FOR MORE THAN 75 YEARS

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UTILIZATION COST

is determined by comparing the initial cost of a roll to the actual number of operating hours of service or the yardage run secured from the roll.

Keeping such a record prevents excessive roll costs.

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For nearly a century, the name WALDRON has been known for perfection in embossing equipment and mastery in the science of designing and building embossing rolls.

No element in embossing equipment is so subject to varying quality as the paper roll. Yet in none is quality so important. The keenest embossing experts know the futility of judging roll construction and quality by appearance. By specifying Waldron Paper Rolls they are certain of paper quality, sufficient compression, properly proportioned heads and shafts, long life and economical operating service.

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constructed. The cost of the cellulose plant is put at over 18,000,000 rubles.

Cardboard Factory Being Completed

Near the paper mills of Balakhna, mentioned above, a cardboard factory with an annual capacity of 13,500 tons is being completed and will be put in operation this year. This mill, the largest cardboard manufactory in the Soviet Union, will cost over 4,000,000 rubles, including workers' dwellings, and will use the power from the regional station at Balakhna.

Of the existing plants undergoing extensions and reequipment the Golodai factory near Leningrad is the largest. The Golodai mill has been in almost continuous operation since 1881 and the obsolete equipment is being replaced by modern machinery. A new paper machine with a daily output of 5 tons, six continuous defibrators producing 120 tons of wood pulp per day and a new turbo-generator for the power plant are being installed. New warehouses and storage facilities are being prepared and the transportation of the lumber, coal, and paper mechanized. These changes will cost about 7,500,000 rubles and will increase the production of paper by 20,000 tons and of wood pulp by 10,000 tons.

Okulovka Mills Being Re-equipped

The Okulovka mills in Novgorod province are being reequipped at a cost of 4,600,000 rubles and the capacity increased from 25,000 to 35,000 tons of paper. The new machinery is scheduled to start operating this year. The Derniaki cardboard factory nearby is having its capacity increased from 1,000 to 2,000 tons. The Sokol paper mills, located on a branch of the Dvina River in Vologda province, through the installation of new machinery and improvements on the existing equipment, will increase production of cellulose by 6,000 tons and paper by 10,000 tons, reaching a total of 31,000 tons. Another cellulose plant located 5 kilometers down the river from the Sokol factory is being overhauled so as to bring its capacity up to 26,500 tons. The Malina mills in the Ukraine which were partly destroyed by fire several years ago have been rebuilt and reequipped. The capacity of the factory, which manufactures cigarette paper, has been increased from 1,300 to 2,000 metric tons. A number of mills of lesser importance are also undergoing extensive repairs.

Fifth Place Among European Countries

It is expected that the completion of the new plants and additions to existing plants will bring the Soviet paper industry up to the fifth place among European countries, after Germany, England, France and Sweden.

During the fiscal year 1926-27 the Amtorg Trading Corporation purchased in this country equipment for Soviet paper mills to the value of $290,700. Nine Soviet technicians and workers have just completed a study of the Canadian paper industry.

To Build Railroad Near Sylvia Lake

GOUVERNEUR, N. Y., July 9, 1928.—A new railroad spur to be run from the New York Central line to the talc mines near Sylvia Lake is being planned. New York Central engineers are now at work surveying for the new line which will be approximately four miles in length. The International Pulp Company and the W. H. Loomis Talc Company are among the firms which will benefit by the project. Both the International Pulp Company and the Loomis Talc Company operate talc mines in the Sylvia Lake region, both firms transporting their talc ore at present by teams or motor trucks to mills some distance from the mines.

The extension of the railroad into the Sylvia Lake area has been surveyed and tentatively worked out in previous years on account of the talc mine properties that have been operated for more than forty years. The building of a spur, however, never materialized but an increase in the talc operations and with the building of a new zinc mill by the St. Joseph Lead Company the expenditure has apparently become feasible.

PHILADELPHIA DEMAND LIGHT

(*Continued from page 26*)

purchase of substantial stock interests in another mill in new territory and the payment of dividends. Plans for the company to pay a stock dividend on its common stock amounting to $25 per share of the common outstanding, were disclosed in the announcement of the banking group headed by A. G. Becker & Co., who are handling the new issue.

Matthias & Freeman Acquire New Quarters

Matthias & Freeman, fine paper dealers, have acquired the premises at Fifth and Cherry streets, on the northeast corner. The entire first floor of the premises have been leased. The new quarters give larger floor space than the present site and will be devoted to its headquarters for printing papers and box makers specialties. The company is one of the largest specialists in box makers papers in this section, controlling several mill outputs.

Raubsville Mills in Bankruptcy

An involuntary petition in bankruptcy was filed in the United States District Court, here, in late June by the creditors of the Northampton Paper Mills, Inc., of Raubsville, Pa., manufacturers of crepe, towels, toilet, lightweight news, and chip board, bogus wrapping and specialties. The head of the firm is J. F. Auer. Other officers are William C. Moore, secretary, and Alexander M. Sinclair, treasurer. P. H. Moran is superintendent of production. The creditors of the paper making concern filing the petition are Glaser & Kaplin, $3,686; H. Goldman & Son, $2,378; and M. S. Reilly, $24,669. The president, J. F. Auer, has for many years been associated with the paper industry of this State, both as manufacturer and distributor, previously conducting a business in this city with Earl W. Twitchell, shortly after the World War, as Auer and Twitchell.

Paperboard Industries Association to Meet

The next meeting of the Paperboard Industries Association will be held in the ball room, lobby floor, of the Clifton Hotel, Niagara Falls, Ont., Can., July 18 and 19. The Folding Box group will meet from nine-thirty a. m. to twelve noon Wednesday, July 18, the Paperboard group will meet from one p. m. to three-thirty p. m. on Wednesday, the Container group will meet from nine-thirty to twelve noon on Thursday, and the three groups will meet in joint session from one p. m. to three-thirty p. m. on Thursday. The luncheon will be held at twelve noon on Thursday.

Notices are being issued calling meetings of the standing committees and of the executive committees on Tuesday, July 17 at the Hotel Clifton.

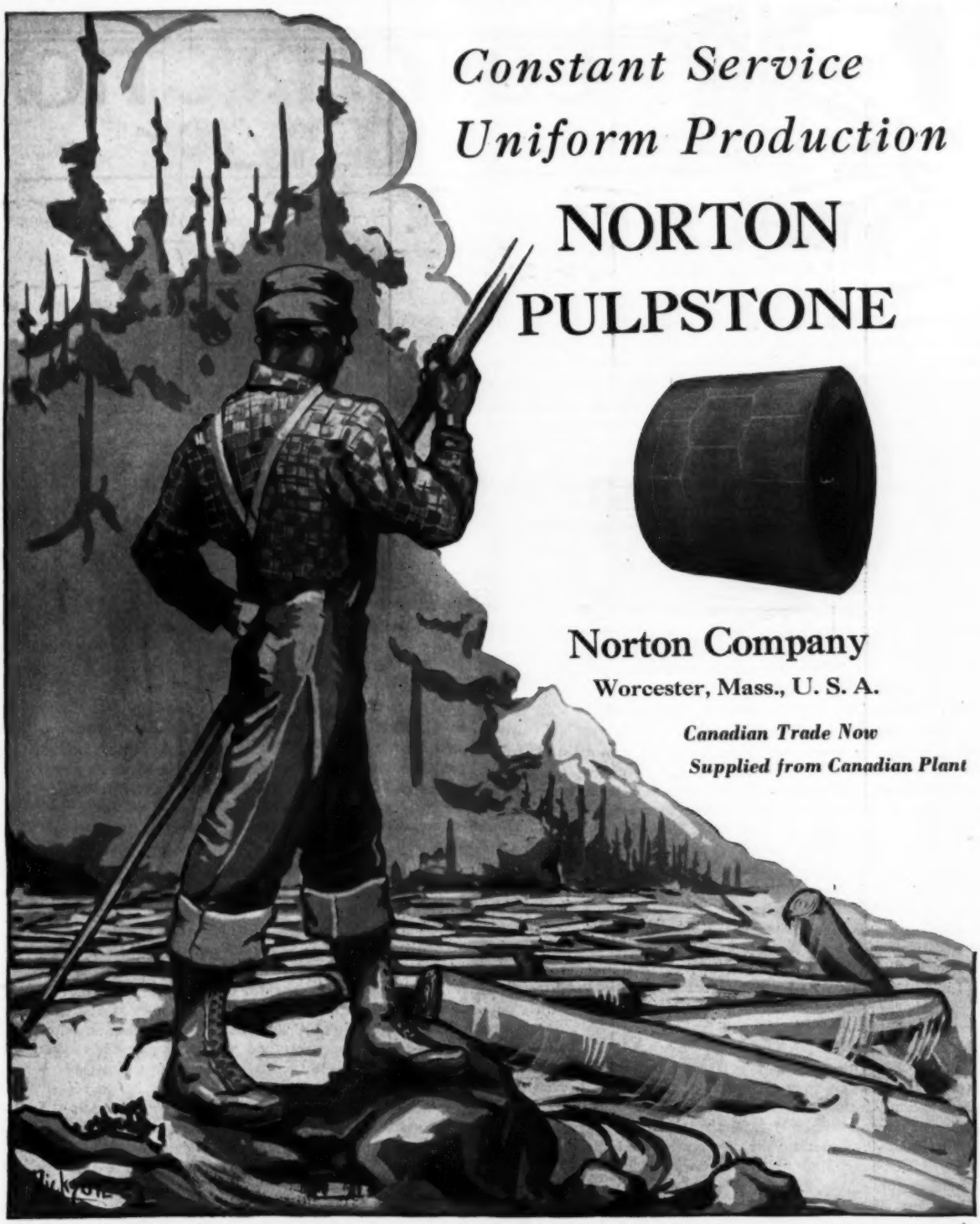
Summer tourist round trip tickets are on sale to Niagara Falls at a saving below the regular fare and it is suggested that members purchase round trip tickets. Return portion of round trip tickets may be validated at the ticket office at Niagara Falls, Ont.

Interesting programs are being prepared for the July meeting and all indications are that the session will be well attended.

Bedford Pulp Co. To Erect Dam

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 11, 1928.—The Federal Power Commission has announced that the Bedford Pulp and Paper Company, Inc., has applied for a minor occupancy license for power development on the James River, near Snowden, in Amherst County, Virginia, proposing to construct a new dam, to replace the old "Cushwa dam", which will back water up to the river approximately 1½ miles. A power house will be built at the dam. The installed capacity of the project is estimated at 6,000 horsepower, which, when developed, will be used by the company in the manufacturer of pulp and paper.



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Norton Company
Worcester, Mass., U. S. A.

Canadian Trade Now
Supplied from Canadian Plant

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Grinding Wheels
Grinding Machines

Refractories-Floor
and Stair Tiles

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Snowden, Va.—The Bedford Pulp and Paper Company, Bedford, Va., has made application to the Federal Power Commission for permission to proceed with a hydro-electric power development on the James River, near Snowden, to be used for service at its mill. It is purposed to construct a new power dam to replace the present Cushwa dam; a transmission line will also be constructed to mill site. Estimated cost of project has not been announced.

Port Townsend, Wash.—The Zellerbach Company, San Francisco, Cal., is reported to be planning the construction of a new unit at its local mill, now in course of erection, equipped for paper bag production. Work on a pulp mill is now in progress and is expected to be ready for service at an early date.

Kalamazoo, Mich.—The Kalamazoo Stationery Company, Harrison street, has plans in preparation for a new one-story power plant for service at its factory, to be located on Taylor street, estimated to cost close to $50,000, with equipment. Billingham & Cobb, 211 Woodward avenue, architects, will ask bids on general contract at early date.

Philadelphia, Pa.—The Matthias & Freeman Paper Company, 117 North Seventh street, has leased a floor in the building at Fifth and Cherry streets, and will occupy for expansion.

Appleton, Wis.—The Fox River Paper Company, 401 South Appleton street, has completed plans for a new boiler plant at its mill, reported to cost more than $30,000, with equipment, and will begin work at an early date. Orbison & Orbison, 110 West College avenue, are engineers, in charge.

Mishawaka, Ind.—The Mishawaka Paper Mills, Inc., recently formed by local interests with capital of $31,200, plan the operation of a paper mill in this vicinity. It is expected to begin work at an early date. P. J. Gallagher, K. W. Simon and Charles Krause, all of Mishawaka, head the new organization.

New York, N. Y.—Fire recently damaged a portion of plant of Livingston & Co., Inc., 474-78 West Broadway, manufacturer of paper boxes and containers. An official estimate of loss has not been announced. The damage will be replaced.

Mechanicsville, N. Y.—The West Virginia Pulp and Paper Company, 200 Fifth avenue, New York, has work under way on its expansion and improvement program at local mill, to consist of new additions, installation of additional equipment and reconditioning of present machinery. Entire work is reported to cost close to $500,000. General contract recently was let to the Morton C. Tuttle Company, 31 St. James avenue, Boston, Mass., engineer and contractor.

Hoquiam, Wash.—The Grays Harbor Pulp Company has concluded arrangements with the Grays Harbor Railway and Light Company for the construction of a power transmission line for service at its chipping plant in the Grass Creek district. The entire project will cost upwards of $80,000.

Nekoosa, Wis.—The Nekoosa-Edwards Paper Company is disposing of a bond issue of $3,500,000, or which about $1,400,000 will be used for financing in retiring a previous bond issue, and such part of remainder as necessary for proposed expansion and improvement program at the mill, recently announced. Arrangements are being made to proceed at once with a new one-story structure, 85 x 200 feet, to be followed by a two-story unit for finishing and other departments. E. P. Gleason is company engineer.

Brooklyn, N. Y.—The Hamilton Bank Note Company, 142 Adams street, manufacturer and distributor of bond and watermarked stocks, has awarded a general contract to J. R. Wild, 8 West Fortieth street, New York, for a proposed four-story addition to factory, reported to cost about $85,000. Work will begin immediately. Lockwood, Greene & Company, 100 East 42nd street, New York, are architects and engineers, in charge. G. A. Fields is one of heads of company.

Appleton, Wis.—The Appleton Coated Paper Company, North Meade street, has issued a call for bids on general contract for its proposed new mill addition for increased capacity. It will be one-story and basement, 107 x 240 feet, to cost close to $125,000, with machinery. Lockwood, Green & Co., 400 North Michigan avenue, Chicago, Ill., are architects and engineers.

Neenah, Wis.—Officials of the Kimberly-Clark Company have formed the Kimberly-Clark Corporation under Delaware laws, to take over and expand the present company, as well as its affiliated interests, including the Spruce Falls Power and Paper Company, Ltd., with large news print mill at Kapuskasing, Ont., said to represent an investment of more than $25,000,000. The new company will succeed to all seven mills of the Kimberly-Clark organization, located at Neenah, Kimberly, Appleton and Niagara, Wis., and Niagara Falls, N. Y. J. A. Kimberly is president.

Mittineague, Mass.—Work has been started on demolishing the old Agawam No. 1 Mill of the Strathmore Paper Company, in connection with plans to beautify the mill property. The unit is quite antiquated; it was built about 75 years ago and was occupied by Horace A. Moses for his first production of paper. The structure has been idle for some time. The approach to the mill, including road, trees, shrubs, etc., will be made more attractive. It is purposed to remove the telephone poles at a later date.

Chicago, Ill.—The Federal Folding Box Company, 1214 North Wells street, recently organized, is planning the early operation of a local plant for manufacture of special paper boxes and containers. The company is capitalized at 250 shares of stock, no par value, and is headed by S. M. Francis and Anton J. Kreme.

Beloit, Wis.—The Beloit Box Board Company, Second street, has secured a permit for its proposed new mill addition and will proceed with superstructure at once; it will be two-story, 105 x 110 feet, estimated to cost about $25,000, with equipment.

Hingham, Mass.—The Korola Company, recently organized with a capital of $99,000, plans early operation of a local plant for the manufacture of paper cups and kindred paper goods. Theodore M. Pruden is president; and Augustus S. Nye, 178 Atlantic avenue, Boston, treasurer and representative.

Cap De La Madeleine, Que.—The National Forest Products Company, Ltd., care of the Canada Power and Paper Company, Ltd., is reported to have plans under way for the construction of a new pulp mill in this district, to cost more than $300,000, with

"Here's What we Learned, Jim."

"We've known for a long time that conditions at the dryers were bad. Steam costs were far out of line. And the sheet, too, plainly showed an imperfect drying condition. We also knew that something had to be done—and something *was* done.

"Some months ago a Fulton Dryer Drainage System was installed. It was designed to meet our particular requirements—and it certainly led us out of the woods in a hurry."

Steam efficiency in dryers increased
Production increased
Steam costs cut
Quality of product improved
Broke reduced

Taking all of these various benefits into consideration, we are told by our Cost Department that the charge for this installation will be more than returned in less than a year.

If dryer conditions are "not right" in your mill—and they probably are open to improvement—it will pay you to investigate the Fulton Dryer Drainage System in a few of the nearly 200 mills now using it.

Each installation designed special for the mill that gets it. Illustrated literature sent upon request.

The Fulton Engineering Co. Middletown, Ohio

Western Rep. Woodbury & Wheeler Co., 55 2nd St., Portland, Ore.

Fulton

Dryer Drainage Systems

machinery. Power supply for operation will be furnished by the last noted company.

Edmonton, Alta.—The Dominion Carton & Envelope Company, Ltd., has taken out a permit for the erection of a proposed new plant, for which general contract has been let to L. F. Toby, Tegler Building, Edmonton. Foundations will soon be laid. It will be one-story, 100 x 185 feet, reported to cost close to $40,000, with equipment. R. P. Blakey, Empire Building, is architect.

New Companies, Etc.

Grand Rapids, Mich.—The Paramount Paper Products Corporation of Michigan, care of the Colonial Charter Company, Citizens Bank Building, Wilmington, Del., has been incorporated with a capital of $200,000, and 12,000 shares of common stock, no par value, to manufacture paper goods.

New York, N. Y.—The Luzerne Paper Corporation, 475 Fifth avenue, New York, with mill at Hadley, N. Y., has filed notice of increase in capital from 1,000 to 15,500 shares of stock, of which 1,500 shares will have par value of $100 ($150,000), and 14,000 shares common stock, no par value, a portion of proceeds to be used for expansion.

New York, N. Y.—The Variety Label Company has been incorporated with a capital of $5,000, to manufacture paper labels and kindred specialties. J. I. Krefetz, 570 Seventh avenue, is incorporator and representative.

Raubsville, Pa.—An involuntary petition in bankruptcy has been filed against the Northampton Paper Mills, Inc., by several creditors. The company operates a local mill for the production of tissue and lightweight paper stocks.

Kalamazoo, Mich.—The Sutherland Paper Company has filed notice of increase in capital from $1,500,000 to $1,750,000, for general expansion. L. W. Sutherland is president.

Chicago, Ill.—Following recent acquisition of the plant of the Chicago Coated Board Company by the Container Corporation of America, Inc., 111 West Washington street, the Robert Gair Company, New York, of which first noted company has heretofore been a subsidiary, will receive, it is stated, about $3,500,000, cash, and 20,000 shares of common stock of purchasing company.

Natick, Mass.—The Massachusetts Tag and Label Company has been incorporated with a capital of $100,000, to manufacture paper goods of various kinds. Philip Cowan is president; and Myer L. Orlov, 122 Winchester avenue, Brookline, Mass., treasurer and representative.

Chris Jensen Leaves Fort Edward

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., July 9, 1928.—Chris Jensen, superintendent of the cutting and finishing departments of the local plant of the International Paper Company, has tendered his resignation and will shortly leave Fort Edward for the Middle West where he has accepted an executive position with a large paper mill. Mr. Jensen has been connected with the local I. P. Co. since the first of the year and in this period has become exceedingly popular with the staff and workers. He was the guest of honor at a farewell reception at the plant recently and was presented with a gold watch and chain by employees of the cutting and finishing departments. The presentation speech was made by Frank W. Harris and Mr. Jensen responded feelingly. His successor at the local plant has not been announced.

Longview Fibre Co. Starts New Machine

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 1, 1928.—The Longview Fibre Company, Longview, Wash., has just put in operation the new paper machine for making kraft wrapping paper. This is a 172-inch Yankee type Fourdrinier with a capacity of 25 to 30 tons daily.

This product is in addition to the major product of the plant, which is a heavy fiber board, made on the board machine with a capacity of 100 tons daily.

News of the Boston Trade

BOSTON, Mass., July 9, 1928.—Seasonal quiet continues in the paper market here, with no particular feature reported. Prices, from ledgers and bonds to kraft, remain unchanged, and there does not seem to be any reason for a decline before the fall activity begins.

Improvement is noted in box board. Although a number of the box factories are shut down for a week or two for vacations and repairs at the same time that some of the candy manufacturers have closed their plants, orders have been placed for fall and Christmas trade for confectionery containers. There is a little more demand for corrugated board. Single manila pulp lined board has been showing a softening tendency and is now quotable at 52.50 to 57.50, compared with a previous range of 55.00 to 60.00.

Conditions in old papers are practically unchanged. The tendency on No. 1 books, heavy, continues easier, and this commodity is now quoted at 1.55 to 1.60, although some are asking 1.75.

Among the sales of bagging have been a car-load of scrap sisal at 1.25 and a car-load of scrap sisal for shredding at 1.50. Business in new and old domestic rags is moving along in the same channels in about the same volume.

In foreign rags lace curtains have been active, at least in certain quarters. A sale of 60 tons was recently made at 5.50, and the minimum quotation is 5.00.

John Carter & Co., Inc., are to be among the distributors of the International Paper Company's Adirondack Bond and Ledger.

J. E. Perry has severed his connection as salesman for Munro & Church, box board dealers, and has started in business for himself at 10 High street, Room 708. He will handle box board.

T. M. Dix, one of the vice-presidents of Spaulding & Tewksbury, is passing his vacation during the month of July on his farm at Sandwich, N. H.

Charles W. Fields, vice-president of Baird & Bartlett, was at his former home at Bristol, N. H., last week.

Arthur C. Hall, treasurer of John Carter & Co., Inc., has returned from a vacation at his summer home at Connecticut Lakes, Northern New Hampshire.

Estate of Garret Schenck

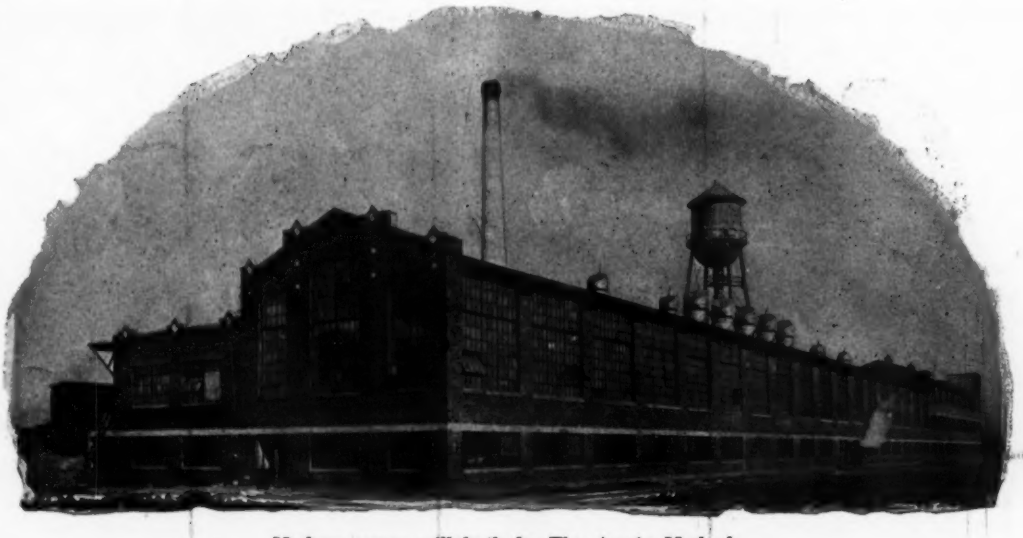
BANGOR, Me., July 9, 1928.—Inventory of the estate of Garret Schenck, Millinocket and Weston, Mass., late president of the Great Northern Paper Company, schedules the total value at $2,986,132, besides 18,000 shares of Great Northern stock valued at $1,888,000, which may be added if the shares have not been transferred to his wife, Emma Schenck.

The bulk of the estate is in securities which include 36,948 shares of capital stock of the Great Northern Paper Company, quoted at 66, $2,438,568; 3000 shares common stock of the N. Y., N. H. and H. Railroad at 62½, $187,500; 1109 shares common stock Maine Central Railroad at 64, $70,967; 1500 shares adjustment stock of the Eastern Massachusetts Street Railway at 54, $81,000; 2500 shares common stock Eastern Massachusetts Street Railway Company at 29, $72,500.

Mr. Schenck died at his home at Weston, in January. His will was made about a year before. There were no public bequests. To his wife is given the house in Weston. To Lester R. Smith of Boston is given $5000.

State Monopoly on Paper in Spain

WASHINGTON, D. C., July 3, 1928.—A State monopoly on paper has been established in Spain according to a report received here. The decree institutes a commission to improve the plants for the manufacture of paper generally and of news print particularly. The duties on foreign news print and other paper were increased at the time of the revision of the customs tariff.



Modern paper mill built by The Austin Method

Speed, Economy and Efficiency Are Assured When Austin Builds

Experience. Austin has built many large efficient Paper Mills from Coast to Coast besides other large industrial projects by the score.

Co-operation. Austin will co-operate fully with your own Engineers on designs, plans, etc., for your new mill.

Modern Features; Speedy Construction. Austin will build your modern, daylighted Mill in the shortest possible time.

Maximum Return per Dollar Invested. You are assured the full benefit of more than a half-century of building experience, when Austin does the work.

It will mean much to you, if your project is a large one, to know that your Builder is equipped and qualified in vision, experience and facilities, to co-operate with you—as Austin is.

It will mean just as much if you are planning a smaller unit—for there you will find Austin Building Service equally valuable, and rendered with the same thoroughness and interest.

Find now how Austin can help you. Preliminary plans, costs, etc., will be furnished promptly. We cordially invite you to phone, wire or write the nearest Austin Office.

THE AUSTIN COMPANY, *Engineers and Builders*, Cleveland

New York Chicago Philadelphia Detroit Cincinnati
Pittsburgh St. Louis Seattle Portland
The Austin Company of California: Los Angeles and San Francisco
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We are interested in the erection of a .....
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Number of stories .....
You may send me a personal copy of "The Austin Book of Buildings," Free to Industrial Executives.
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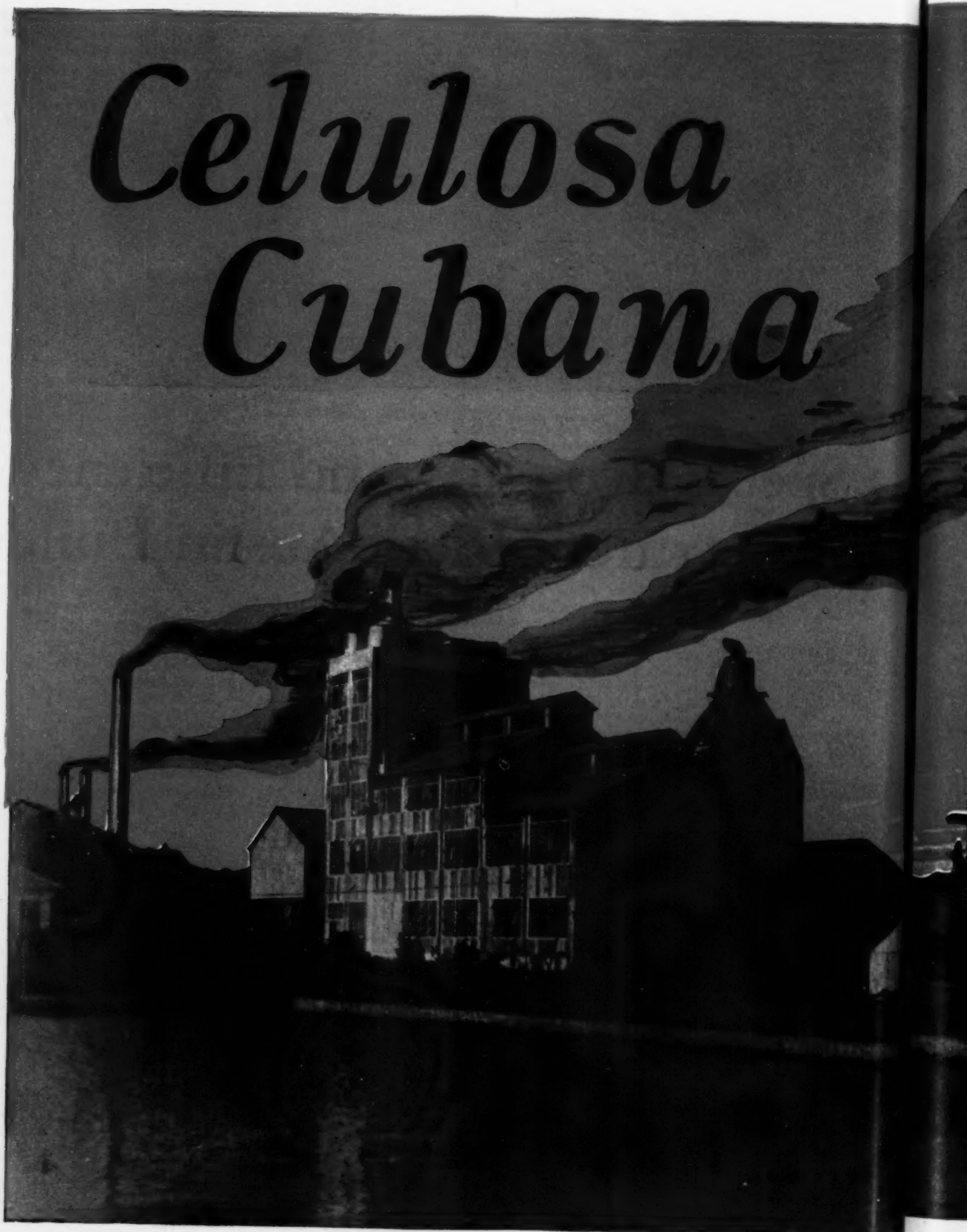
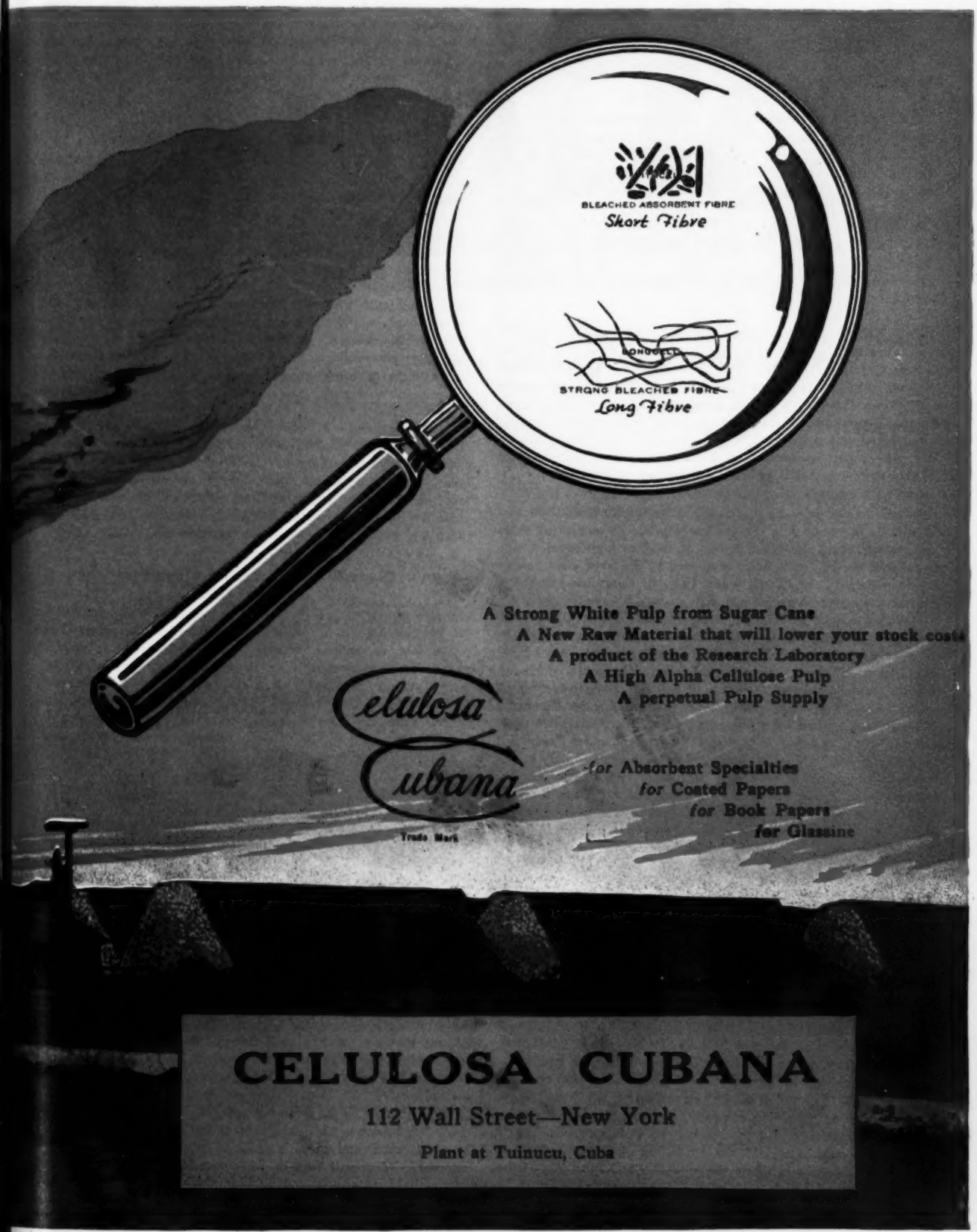

Celulosa
Cubana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STRONG BLEACHED FIBRE
Long Fibre
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A product of the Research Laboratory
A High Alpha Cellulose Pulp
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New York Trade Jottings

G. A. Ware, of the News Print Service Bureau, has returned from his vacation and is now inspecting news print mills in New York State.

* * *

The New York Division of the Salesmen's Association of the Paper Industry plans to hold its first summer outing of the season on Tuesday, July 17, at the Leewood Golf Club, Crestwood, on the Harlem Division of the New York Central Railway. Plans have been made for luncheon and a full days session of golf.

* * *

W. N. Hurlbut has been elected a vice president of the International Paper Company, New York. Mr. Hurlbut, who recently joined the executive staff of the company, has been identified for many years with the pulp and paper industry in the United States and Canada.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, left New York last Monday on a long inspection trip, accompanied by his son, Gifford. He plans to visit Glens Falls, Lyons Falls, Fulton, Wolcott and Rochester, New York; Thorold, Toronto, Ogdensburg and Ottawa, Ontario; Montreal, Sherbrooke, Windsor Mills, Three Rivers, Donnacona and Lake St. John District, Quebec; Edmunston, Grand Falls, Bathurst and Liverpool, Nova Scotia; Woodland, Millinocket, Augusta and Brunswick, Maine. Mr. Kellogg expects to return to headquarters by the end of August.

* * *

Standard news print paper, as used in Paragraph 1672 of the Act of 1922, is not limited to the particular grade or quality of news print which meets the requirements of modern high speed rotary or cylinder presses, such as are employed by the large metropolitan daily newspapers, the United States Customs Court has just ruled, but likewise embraces news print like that used by weekly and semi-weekly newspapers in printing their regular editions. Continuing, the court points out that the single factor recognized as standard in all news print is its weight, to wit, 32 pounds to the ream of 500 sheets 24 x 36 inches. Other specifications, the court concludes, are not standardized and therefore do not govern in trade. This ruling sustains protests of the James P. Heffernan Paper Company, of New York. Some of the paper in question was classified upon entry as wrapping paper, with duty at 30 per cent under Paragraph 1309, Act of 1922, while the remainder was subjected to duty at the rate of one-quarter of one cent per pound and 10 per cent ad valorem under Paragraph 1301 as printing paper. Claim for free entry under Paragraph 1672 as standard news print paper is granted in a lengthy opinion by Chief Justice Fischer.

* * *

The committee under the plan for the formation of the International Paper and Power Company, which will acquire all of the paper and power properties of International Paper Company and its subsidiary companies, is calling for deposits of the preferred and common stock of International Paper Company, which is to be exchanged for preferred and common stock of the new company. The terms of exchange have previously been announced. In addition to acquiring the International Paper properties, it is expected that successful consummation of the plan will be followed by the new company's acquisition of the large block of New England Power Association shares now held by the New England Hydro-electric Company, which will be sufficient to bring the new company's total holdings of New England Power Association common to 91 per cent. Formation of the new company, which will function primarily as a holding company, will make possible a more complete segregation of International Paper Company's power and utility assets—which total 55 per cent—from its pulp and paper assets, and otherwise facilitate the operation and financing of the properties. Deposits of International Paper Company stock may be made with the Chase National Bank of the City of New York, 57 Broadway, or with the First National Bank of Boston, 67 Milk street, or with the Montreal Trust Company, 11 Place d'Armes. Application will be made to list the certificates of deposit on the New York Stock Exchange. No final date for deposits has been set, but the committee and directors urge prompt action by stockholders to permit the plan to be declared effective at the earliest possible date.

Merge Industrial Instrument Companies

Charles A. Moore, Jr., president of Manning, Maxwell & Moore, Inc., international engineering specialists, announced today the purchase of the American Schaeffer & Budenberg Corporation of Brooklyn, N. Y., and Worcester, Mass., from Ralph Jonas and his associates. The newly acquired company, founded in 1851, is the oldest and one of the largest manufacturers of industrial instruments in the United States.

The business of this company will be co-ordinated with that of the Consolidated Ashcroft Hancock Company, Inc., manufacturers of valves, indicating and recording instruments, owned by Manning, Maxwell & Moore, Inc. This combination, together with other companies controlled by the same interests, will give the United States a commanding position in the world markets for high pressure valves and gauges, recording instruments and similar industrial products.

Manning, Maxwell & Moore, Inc., who have operating plants in New England and the Middle West, will take over the operation of the Brooklyn and Worcester factories of American Schaeffer & Budenberg Corporation at once. The purchase price was not disclosed but it is understood that there will be no public financing.

The American Schaeffer & Budenberg Corporation has been controlled and expanded by the Jonas interests since 1920.

Great Water Power Developments

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 9, 1928.—The Dominion Water Power and Reclamation Service announces that during the present year 550,000 h. p. of turbine capacity will be installed this year in entirely new developments or in additions to existing hydro-electric stations in Canada, and that still further developments involving an additional 2,000,000 h.p. are prospects of the immediate future. Canada's place in water power developed is shown by the following comparisons of approximate water power developments in various countries:

Countries	H. P.
United States	12,000,000
Canada	5,000,000
Italy	2,500,000
Norway	2,000,000
Switzerland	2,000,000
France	2,000,000
Sweden	1,500,000
Great Britain	100,000

Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 11, 1928.—The R. P. Andrews Paper Company has been awarded the contract for furnishing the Government Printing Office with 10,000 pounds of salmon and 30,000 pounds of yellow calendered tag board in 23½ inch rolls at 8.14 cents and 7.94 cents per pound, respectively, bids for which were received on June 18.

The Whittaker Paper Company will furnish 5,000 sheets of 24 x 36 in. 216, brown cloth lined paper at $168.91 per M sheets, bids for which were received on May 23.

Reese & Reese will furnish 1,600 pounds of 24 x 36 red rope paper at 10.45 cents per pound, bids for which were received on May 16. The same firm will also furnish 26,000 sheets of 25 x 19 in. manila tissue paper at $1.05 per ream, bids for which were received

profits

in the paper industry depend upon two things 1st wide-awake executives 2nd labor-saving equipment

Profits in the paper industry today depend upon two fundamental factors: (1) the right man at the head, and (2) modern labor-saving equipment.

Successful leaders in business are always progressive. They surround themselves with successful and wide-awake executives who keep informed of every new development. Your product may be excellent—your customers may be satisfied—but without equipment to match the other fellow's costs, your profits are certain to be small.

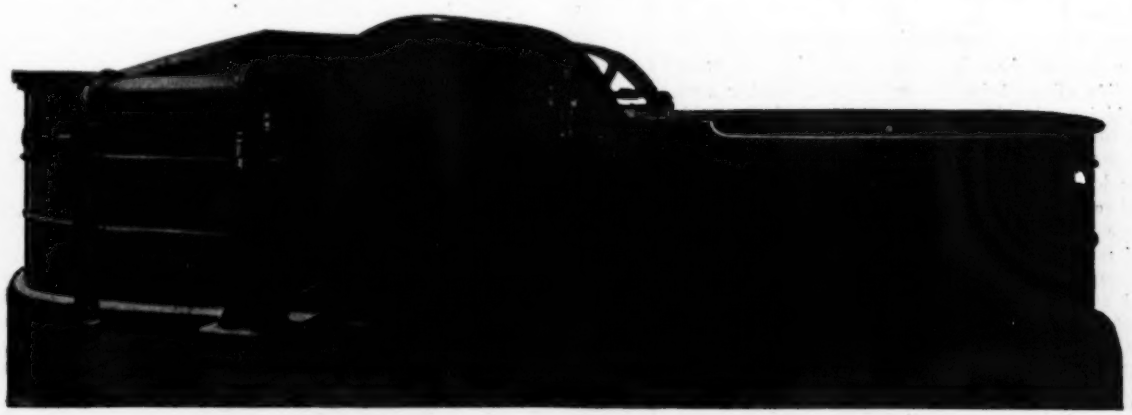
The installation of Mid-West Hi-Speed Beaters is one sure way to cut production costs.

Performance tests easily prove that the Mid-West Hi-Speed Beater has no equal. A comparison will show that you CANNOT AFFORD to operate your present slow-traveling Beater Equipment any longer.

We'll be glad to send you complete details. Have your secretary write us.

THERE IS A WORLD OF DIFFERENCE IN BEATERS

THE MIDWEST MACHINE CO. Dayton, Ohio



MID-WEST PAPER MILL MACHINERY

Power Plant Section

Reducing Power Costs Through Unit Treatment

Conducted by REGINALD TRAUTSCHOLD, Consulting Engineer

Modernizing The Mill and Power Plant

Instrument Control for Sulphite Pulp Mills

With sulphur commanding a price of $20.00 a ton, for example, each pound used per ton of wood pulp produced imposes a sulphur burden of a cent, or substantially the same amount for each ton of chips converted into pulp. Most mills probably use in the neighborhood of 260 pounds of sulphur per ton of pulp, a few get down to 240 pounds and others are so extravagant as to use 300 pounds. Between the two extremes, 240 and 300 pounds, is a net spread of some 60 cents in the cost of pulp production, 25 per cent. in the expense contracted for the sulphur item alone, the control of which is obviously a matter of quite considerable importance.

The majority of mills know pretty well how much sulphur they are burning per ton of pulp produced, for this is the index of efficiency with which the pulp production is consummated, but, it is just as true that relatively few can tell with any accuracy how much free sulphur is sent over or what is the percentage of sulphur-dioxide (SO_2) produced during the preparation of the cooking acid. The latter gas is known to be the essential agent in the production of the cooking acid, of course, yet the average mill will be found to run with between 12 and 16 per cent. SO_2, far too wide a margin and another indication of the 25 per cent. cost spread commanding the attention of every sulphite mill interested in keeping down costs.

Where the sulphur is consumed in burners, and to a certain extent where sulphur dioxide is derived from burning pyrites in a furnace, there is always the liability of excessive sulphur-trioxide (SO_3) being formed and of sulphur escaping without combining with the oxygen. These are the two chief sources of the sulphur loss which is largely responsible for decreased efficiencies in pulp production, *i. e.*, excessive consumption of sulphur. The losses incident to SO_3 formation and to free sulphur are well recognized, in fact, as being responsible for a greater sulphur burden than are the questions of age, variety, moisture content and uniformity of the wood chips treated, although these latter characteristics, admittedly, exert some influence upon the amount and strength of the cooking acid required for effective pulp production.

As for the formation of sulphur-trioxide, this reaction does not take place at low temperatures, below about 400 degrees Fahrenheit, nor to any considerable extent between the temperatures of 1,450 and 1,825 degrees, but the gas is formed in maximum quantities in the critical temperature range of 750 to 1,110 degrees and most rapidly when a considerable amount of excess air is present. Contrarily, free carbon is liberated when the supply of air is inadequate. These, as stated, are the chief causes of excessive sulphur consumption in sulphite pulp production, and can only be satisfactorily controlled when visualized by the employment of suitable indicating and recording instruments.

The sulphur-trioxide produced in the system forms sulphates which precipitate out, a direct loss of sulphur and responsible for a considerable loss or spoilage of wood pulp as well. The free sulphur driven off is also a direct loss and aggravates the condition by the further disadvantage of clogging up the pipes of the system. The former loss, formation of SO_3, cannot be entirely avoided, but when proper care is exercised in operating the burners the escape of free sulphur, which is the more serious of the two losses, can be prevented. Both thermal and chemical conditions are involved, the sensitive regulation of which is paramount if the best results are to be secured.

Instruments for SO_2 Control

The first requisite is the control of the temperature of the gases entering the cooler, the heat of the products of a partial combustion. Obviously, a temperature below 400 degrees Fahrenheit, at which there would be no trace of SO_3 cannot be maintained, so the critical temperature is between 1,450 and 1,825 degrees, preferably nearer the lower limit. This calls for the installation of a thermocouple to indicate and record the temperature of the gases entering the cooler, practice which is quite general. Extreme sensitiveness is essential, for if the instrument is at all sluggish in operation it will record only average conditions and insufficient time will be provided for making the necessary valve and mechanical adjustments to meet temperature variations which at most are only indicated. Herein lies the chief value of installing an SO_3 recorder for maintaining a continuous visible record of the percentage of sulphur-dioxide present, as an aid in guiding the necessary manipulations.

The hot gasses entering the cooler are reduced in temperature just as rapidly as possible, in order to guard as much as possible against the formation of SO_3 while passing through the dangerous temperature zone between 1,450 and 400 degrees, so a second temperature-recorder is very advisably installed to note the thermal condition of the gases as they pass out of the cooler, in advance of the gas fan delivering to the strong acid tower. The formation of sulphur-trioxide cannot be entirely prevented, it is true, but it can be limited to a relatively small amount, 1 per cent. or less. Good practice is represented by the presence of not more than 1 per cent. of SO_3.

The most satisfactory instrument control installation for the all important SO_3 gas cooler is then a temperature-recorder (thermocouple unit) for portraying the temperature of the gases entering the cooler, a second temperature-recorder for noting the temperature of the issuing gases, another such instrument for recording the temperature of the cooling water entering and leaving, together with a recording flow meter, and an SO_3 recorder to check and guide the control of the thermal and chemical reactions resulting from the burning of the sulphur. Probably, the ideal arrangement is a combination of SO_3 recorder and temperature-recorder in a single unit, as is in service in a number of the more progressive mills at the present time.

The device for portraying the percentage of sulphur-dioxide present is essentially a guide rather than an active control instru-

ment, for which reason its installation is as yet far from as general as that of temperature recorders. It records continuously the essential fact, however, the percentage of SO_2 present in the gases, which temperature recorders alone can at best only indicate in a general way. Where SO_2 recorders are not employed, it is quite customary to make periodic analyses of the gases to check and guide the regulation of the air supply in sulphur burning, a more costly operation and one which cannot be counted upon to disclose conditions during the intervals between such tests.

Instrument Control of Tower Processes

As the gases issue from, or, more accurately, are drawn from the cooler, the services of a fan are entailed, making the installation of a vacuum-pressure gauge in the gas line before the fan advisable, if not essential. The fan passes the gases into the bottom of the strong acid tower where most of the sulphur-dioxide is absorbed by combination with limestone packing in the presence of weak acid, to form strong acid. Such gas as escapes from this tower then passes to the weak acid tower, entering at the bottom, and combines with the limestone with which this second tower is also charged and water to form weak acid.

The so-called strong acid passes to the reclaiming tower where it becomes further concentrated by the absorption of more sulphur-dioxide relieved from the digester to form the full strength cooking acid. This latter is customarily stored in wooden tanks until required by the digesters.

While these tower processes are quite involved, they are self-contained so that there is little control which can really be exercised other than to keep the strong and weak acid towers suitably charged with limestone and to regulate the supply of water to the weak acid tower. That is, in addition to the control of acid strength by the regulation of the fan in the gas line from the strong acid tower. However, the water flow to the weak acid tower is advisably controlled by a suitable flow meter and a temperature-recorder installation for noting the heat of the gases entering the reclaiming tower from the relief coolers is recommended.

Control of Digester Operations

The actual production of pulp centers around the digester, of course, the device being charged with wood chips and the proper amount of cooking acid drawn from the acid storage tank, the mixture of chips and acid then being cooked by the introduction of steam. These constituents of the batch, or digester charge, must all be accurately measured, naturally, the chips weighed, amount of acid admitted recorded and the flow of steam metered.

The weighing of the chips presents no great difficulty, although very considerable improvement and cost reduction could be made customarily in this direction by the installation of automatic weighers and material handling devices readily procurable. For noting the amount of cooking acid drawn from the storage tanks, the simple expedient of providing the acid storage tanks with suitable recording depth, or liquid level, gauges, as is quite commonly done, represents approved practice. As an alternative, suitable flow meters of the recording type might be installed.

In the operation of the digester, a recording pressure gauge and a temperature-recorder of suitable range, or a combination temperature-pressure recorder should be installed. With the time element entailed, these instruments insure not only satisfactory digester operation, but the ability to maintain substantially constant the characteristics of the various batches of pulp produced.

When the "cook" is completed, the pulp produced is forced into a blow pit, the excess pressure relieved, and the gases and liquor (relief liquor) pass through a separator to disassociate the gas from the liquor and then to the relief coolers from which the cooled gas, sometimes the liquor as well, is returned to the acid system through the reclaiming tower. This cycle of operations preceding the further refinement of the pulp also entails the use of a number of instruments if they are to be expeditiously and economically performed.

The temperature of the gas leaving the coolers is of first consideration and calls for the installation of a temperature-recorder. To insure control of the cooling process, the temperature of the cooling water entering and leaving the relief cooler should also be recorded and the amount of cooling water required, the thermal data furnished by a duplex temperature-recorder and the water supply by a suitable flow meter. A recording depth gauge for noting the depth of the pulp stock delivered to the blow pits completes what may be termed the advisable control instrument installation for the effective regulation of digester operations.

Leaving the blow pits, the pulp stock is screened and washed preliminary to the bleaching of the pulp, but no instruments are entailed unless the wash water is metered. The screening operation, however, is a reliable guide to the efficacy with which the preceding instrument control has been consummated. It is at this point that the presence of any excessive sulphur-trioxide, due to ineffective control of the sulphur burning, makes itself apparent. The sulphates precipitated by this objectionable compound noticeably hamper the satisfactory screening of the pulp stock, slowing up the process and adding to its cost.

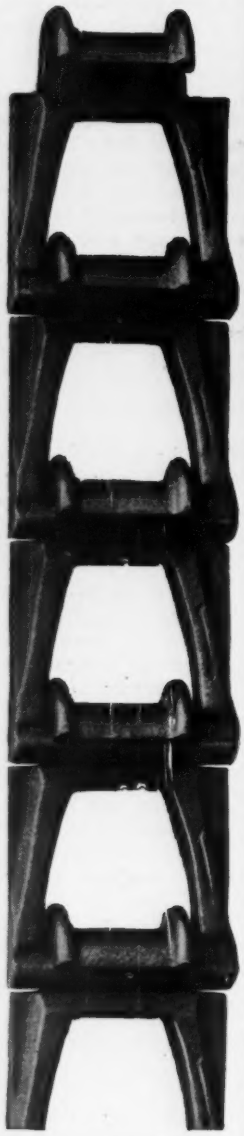
If the bleach liquor is made by dissolving bleaching powder in water, a suitable temperature-recorder should be installed to safeguard the reac-

SYSTEMS OF INSTRUMENT CONTROL FOR SULPHITE PULP MILLS

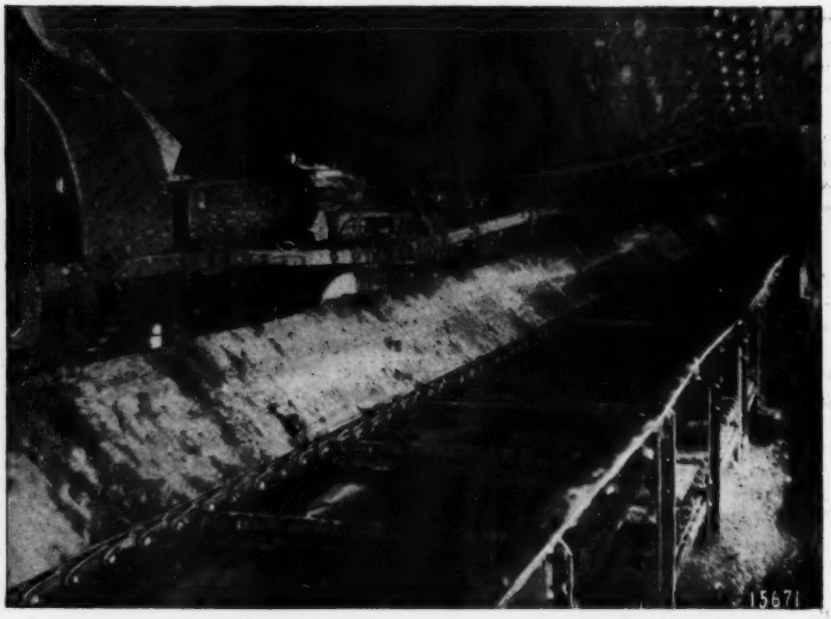
	Recommended Working Range [1]
SO_2 GAS COOLER	
Temperature of entering gases—	
Recording pyrometer (thermocouple)	1450 to 1800 deg. F.
Temperature of issuing gases—	
Temperature-recorder	70 to 150 deg. F.
Temperature of water entering and leaving—	
Duplex temperature-recorder	32 to 100 deg. F.
Supply of cooling water—	
Recording flow meter	
Percentage of SO_2 gas content—	
SO_2 gas recorder	
Note—SO_2 gas recorder and recording pyrometer can be combined in a single instrument.	
TOWER PROCESSES	
SO_2 gas line before fan—	
Recording vacuum-pressure gauge	3-in. vac. to 3-in. press. (water)
Entering gas temperature, reclaiming tower—	
Temperature recorder	70 to 100 deg. F.
Water supply to weak acid tower—	
Recording flow meter	
DIGESTER OPERATION	
Supply of wood chips—	
Recording scales	
Supply of steam—	
Recording steam flow meter	
Temperature recorder	
Supply of acid from storage tanks—	
Recording liquid level gauge	0 to 10, 15 or 20 ft.
Digester control—	
Recording pressure gauge	70 to 90 lbs.
Temperature-recorder	275 to 320 deg. F.
or	
Temperature-pressure recorder	{275 to 320 deg. F. { 70 to 90 lbs.
Temperatures at relief cooler—	
Gas temperature recorder	85 to 105 deg. F.
Cooling water Temp.-recorder (duplex)	50 to 200 deg. F.
Blow pit stock depth control—	
Recording liquid level gauge	0 to 10, 15 or 20 ft.
Supply of wash water (screening)—	
Recording flow meter	
BLEACHING PROCESSES	
Bleach liquor (bleaching powder)—	
Temperature-recorder	30 to 100 deg. F.
Bleach liquor (liquid chlorine) hot water bath—	
Temperature recorder	50 to 150 deg. F.
Supply of water—	
Recording flow meter	
Bleach liquor storage control—	
Recording liquid level gauge	0 to 10, 15 or 20 ft.
Bleaching tanks control—	
Temperature-recorder	70 to 115 deg. F.
PULP PREPARATION	
Stuff chest control—	
Recording liquid level gauge	0 to 10, 15 or 20 ft.
Drier roll control—	
Temperature-recorder	190 to 275 deg. F.
Pulp press control—	
Recording pressure gauge (hydraulic)	2000 to 3000 lbs.
Shipping scales	

[1] Advocated by *The Foxboro Co., Inc.*

Jeffrey Chains for Every Service



Jeffrey Detachable Chain for drives, conveyors and elevators. Quick replacements.



Unloading the Digesters

This Jeffrey 156 Malleable Roller Chain on the straw conveyor stands up under the severe tension of a compound curve.

The Ball Brothers Glass Company installed this conveyor in their strawboard plant at Noblesville, Indiana. It takes the wet straw from the digesters to the storage rooms, changing its level twice without the aid of extra sprockets.

The malleable rollers running on steel tracks give long wear and smoothness to the conveyor.

Jeffrey Chains have served in strawboard plants for forty years handling both wet and dry straw.

The Jeffrey Manufacturing Company

931-99 North Fourth St., Columbus, Ohio

New York	Rochester, N. Y.	Pittsburgh	Boston	Cleveland
Buffalo	Philadelphia	Scranton, Pa.	Cincinnati	Detroit
Utica	Milwaukee	Denver	Atlanta	Houston
Chicago	St. Louis	Salt Lake City	Birmingham	Montreal
Charleston, W. Va.				

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JEFFREY

MATERIAL HANDLING EQUIPMENT

Jeffrey Products

Elevators
Conveyors
Portable Loaders
Coal and Ashes Handling Equipment
Skip Hoists
Chains and Attachments
Sprocket Wheels—Gears
Crushers—Pulverizers
Sand and Gravel Handling, Washing and Screening Equipment
Locomotives
Coal Mine Equipment
Tipple Equipment
Ventilation Fans

for Lower Operating Costs

and an Improved Quality of Your Paper

The Voith Inlet will help you eliminate items of operating expense—whether you operate Fourdrinier, Harper or Yankee machines. It will not only cut operating costs but eliminate troubles that have heretofore been regarded as necessary evils. Better paper is the final result of its operation.

Some of the items where savings are effected:—

Wires last 10% to 15% longer
Fewer shutdowns from breaks
Paper of uniform caliper
Fewer lumps and foam spots
Use more wire for sheet formation

—and the Voith Inlet can be installed easily—any customary weekly shutdown period will be time enough for installation.

Its adaptability and cost-cutting performance are proved by its general acceptance in mills throughout the country—116 mills now operating Voith Inlets. Let us tell you wherein the Voith Inlet can help you reach *lower operating costs* and an improved quality of paper.

VALLEY IRON WORKS CO.

Machinery for Paper and Pulp Mills

APPLETON WISCONSIN

New York Office: 350 Madison Avenue

Western Manufacturing & Sales Division: Smith & Valley Iron Works Co., Portland, Oregon

tion. On the other hand, if the bleach is made from liquid chlorine, a temperature-recorder should be provided for noting the heat of the hot water bath for the chlorine cylinders. In either case, flow meters can advantageously be employed for recording the supply of water.

In conducting the bleaching process, the requisite amount of clear bleach liquor is drawn from the bleach storage and mixed with the proper amount of screened pulp from the screens, the mixture then passing through a series of bleaching tanks. The bleaching completed and after further washing, the stock passes to the stuff chest or else over the wet machine to the pulp press, or direct to the beater stuff chest in the case that the paper mill is adjacent.

The accepted methods of instrument control in such bleaching processes entail the installation of a recording liquid level, or depth, gauge at the bleach liquor storage tanks, so accounting for the consumption of bleach and also a temperature-recorder of suitable range for maintaining a record of the temperature in the bleaching tanks.

Instrument Control for Commercial Pulp Preparation

The stuff chest to which the bleaching tanks delivery should be provided with a depth gauge to record the amount of bleached pulp stock as it is withdrawn by the pulp dryer for the preparation of 90 to 95 per cent. bone dry commercial fibre. The advisable instruments to install, *i. e.*, profitable, in that they quickly justify their installation by savings effected, are a recording thermometer, or temperature-recorder, for the continuous registration of the temperature of the dryer rolls and a steam flow meter for recording the consumption of the heating steam.

Where 50 per cent. bone dry lap stock is produced, the stock after passing over the wet machine goes to a heavy pulp press where it is subjected to a compression of several thousand pounds. The control of the pressure to which the pulp is subjected is naturally of much importance and the approved practice is to provide the press with a recording pressure gauge, usually of the hydraulic variety.

This then, with the addition of shipping scales for weighing the prepared commercial wood pulp, is a brief composite picture of the really important part played by instrument control in the profitable operation of a sulphite pulp mill. It is a composite portrayal, admittedly, for it is very questionable whether any of the sulphite pulp mills have as yet gone so far as to install all the instruments mentioned. Also, it is very probable that the various processes as conducted in many sulphite pulp mills may not lend themselves to any such comprehensive system of instrument control as would be represented by the adoption of all the applications cited. The applications, however, have all been made individually and with quite decided profit, the instruments paying for themselves within brief periods. Hence, their installation can very well be recommended.

A tabulated summary of the varieties of instrument control discussed is presented for clarity in visualizing the value of placing the various major processes under instrument regulation so far as feasible, which also includes the working ranges of various recommended instruments as advocated by an instrument manufacturer who has given the subject much study and thought. These recommended ranges, furthermore, have also been checked and substantiated so far as possible from opinions expressed by other instrument manufacturers and from data culled from statistical records of approved installations.

The aim of the discussion, however, has not been to dictate to the sulphite pulp mill how its business should be conducted, but simply to draw attention to instrument control as a means of saving money. The necessary instruments are procurable today in approved forms of well demonstrated merit from numerous manufacturers and this, consequently, debars the specific mention of any.

Eddy Paper Co. To Be Dissolved

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 9, 1928.—Dissolution of the Eddy Paper Company of Michigan and the distribution of its assets among the qualified preferred stockholders of the concern will soon become an actuality. A decision handed down April 13, 1928, by the circuit court of St. Joseph county and determining the status of preferred and common stockholders is to be acted on by Charles A. Blaney, last president of the Eddy Paper Company.

The case was docketed as "In the matter of the application of the Eddy Paper Company for a voluntary dissolution" and resulted in the socalled Maxwell suit, to determine the status of preferred and common stockholders in the distribution of the company's assets.

It was over four years ago that the Eddy Paper Company of Michigan sold out to the Eddy Paper Corporaion of Illinois, the latter concern agreeing to pay 25,000 shares of no par common stock for the assets of the Eddy Paper Company of Michigan, both common and preferred stockholders to participate in the distribution. Preferred stockholders immediately entered an objection and took the stand that the claims of the preferred stock holders must be settled first and that the company, outside its debts, did not have enough to pay in full the claims of the preferred share holders.

After repeated hearings a decision has been handed down whereby the preferred stockholders are to receive every full payment from the Eddy Paper Corporation, on the basis of 15 shares of Eddy Paper Corporation for each 100 shares of preferred stock in the Eddy Paper Company of Michigan. The distribution of this stock is to be handled by Former President Blaney. He has been assigned 22,325.8437/10,000 shares of Eddy Corporation stock to satisfy the claims of outstanding preferred shares numbering 148,838, 93/100.

"In cases where it is impossible to make adjustment on even share basis, claimants will receive shares and fractional warrants," said Mr. Blaney. "Each one will thus be paid in full, the warrants being transferable. By terms of the settlement, common stockholders get nothing."

The case has attracted a great deal of interest in this section of Michigan, where reside practically 1,000 shareholders of the former Eddy Paper Company. The decison is considered a great victory for the preferred sharenolders, who will now receive practically 50 per cent of their original investment. The winners were represented by Carney and Carney, Mason and Sharpe, Joseph Folz, Jackson, Fitzgerald and Dalm, all of Kalamazoo and E. K. Anderson and Harry Pell, of Plainwell. Harry C. Howard, was attorney for the Eddy Paper Company and its common stockholders.

Dayton High Speed Beaters

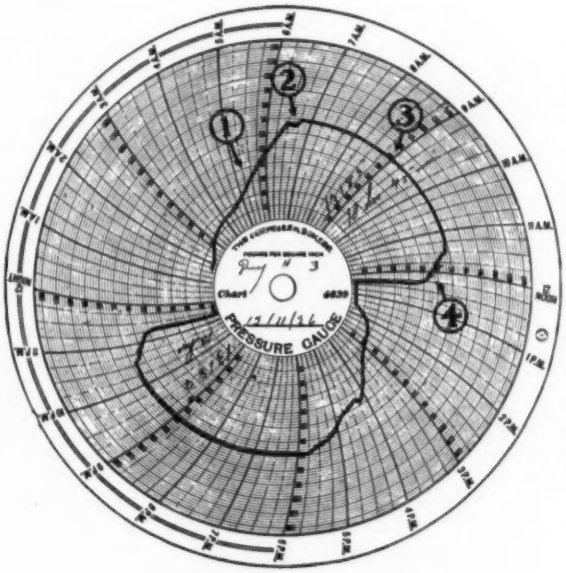
The Dayton Beater and Hoist Company, manufacturers of the Dayton High Speed Beating Engine, with offices and factory at Dayton, Ohio, have just published a new bulletin which describes and illustrates their method of rebuilding old type Holland Beaters of both wood tub and iron tub construction into Dayton High Speed type. The bulletin also contains a diagram representing an average of test data obtained by actual performance on three different kinds of stock, namely book, bond and board, (although equally substantial savings have been secured on other stock, including bristol, jute, kraft, rag, rope, tissues, roofing, waxing, etc.), and shows the relative increase or decrease in values, covering the most vital points for comparison such as capacity, density, travel speed, beating time, and beating cost.

Many mills of prominence use Dayton High Speed Beaters and the booklet contains a list of nearly one hundred plants where installations are working. In this list the number of beaters is specified and also the kind of stock on which each installation is working.

To the Sulphite Superintendent—

Here's the Mason No. 131 Regulator for digesters—

and here's a typical chart from a mill—



1. Pressure built up slowly by hand regulation.

2. Mason Regulator takes hold.

3. Pressure controlled by Mason Regulator. Notice the steady, accurate maintenance of exact pressure.

4. Blow down.

* * *

Mason Regulators on digesters and paper machines save steam and help to produce a more uniform product. High initial pressures and super-heat do not affect their accuracy. Write for a copy of Catalog No. 62.

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1609

PAPER TRADE JOURNAL
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NEWS PRINT IN CANADA

According to reports from Montreal, a truce has been called in price competition in the news print industry, independent companies being reported to be disposed to work in harmony with the big news print mergers, provided that the latter are fair in adjustments necessary to maintain co-operation.

The suggested plans for the appointment of a dictator for the industry do not appear to have gone any further, but hopes have not been dispelled that a working agreement may be arrived at whereby a really comprehensive system for controlling production will be set up.

Meanwhile the new turn of events has considerably changed the attitude of the investing public towards securities in paper making enterprises and prominent firms are advising clients even in the case of well-established firms that trading in their securities can only be regarded as speculation.

It is pointed out that the news print mills on the North American continent have a present capacity of 14,402 tons per day, as against the average daily consumption of 11,000 tons, and that there are no prospects of demands increasing in the near future sufficient to take up the surplus of 3,402 tons.

Moreover new machines are coming into production in Canada with a total capacity of 1205 tons, and these will further aggravate the situation, especially so if the bugbear of European competition in news print becomes serious. The Provincial Governments are known to be much concerned over the situation, as they feel it would be a serious setback to Canadian prosperity if the output from the major export manufacturing industry were sold at unremunerative prices. It would not be surprising, should the situation become more acute, if governmental control were established—a development which it is desired to avoid.

RECONSTRUCTING STANDARDS COMMITTEE

Reconstruction of the American Engineering Standards Committee to keep pace with the growth of the industrial standardization movement in the United States is now under way, according to an announcement by the Committee. The principal features of the reconstruction are the definite federation of national organizations, under the name American Standards Association, in such a way that trade associations interested in standardization may more readily join in the direction of the movement; placing the technical work of approving standards in a Standard Council, and concentrating administrative and financial responsibility in a Board of Directors composed of twelve industrial executives.

The reorganization has been unanimously approved by the Main Committee of the A. E. S. C., and is now being voted upon by the member bodies. The action of the committee results from more than a year's intensive consideration of the subject by the main committee and rules committee. The latter was enlarged for the purpose to include a representative of each of the 19 member-bodies desiring representation.

In submitting the plan for the formal approval of the member-bodies, William J. Serrill, chairman of the Committee states: "The ten years' experience of the committee has brought to light certain fundamental difficulties inherent in the old organization. It is the purpose of the reorganization to eliminate these difficulties, to place the operation of the Committee on a sound administrative basis, and to facilitate the financing of the work on an adequate scale."

Among the conditions which led to the reorganization, are the growth of the trade association movement together with the predominating position which the trade association is coming to have in the field of industrial standardization; and the increasingly important direct part which the plant executive is playing in the standardization activities within his plant and in the movement as a whole. Recognition of this latter condition is reflected in the make-up of the Board of Directors, which will control the general administrative and financial affairs of the association. The industrial executives composing this Board will be elected on nomination of member-bodies, and will serve for three years.

Approval of standards and matters of procedure will be in the hands of a Standards Council. The Council will be composed of not more than three representatives of each of the member-bodies, the Councillors also serving for a period of three years.

"The underlying principles of the A. E. S. C. remain unchanged," Mr. Serrill adds. "The basic functions remain completely in the hands of the representatives of the member-bodies. The individual members, whether of the board of directors or of the Standards Council, are appointed or nominated by the member-bodies, which thus remain the fundamental units in the organization.

"The name American Standards Association is being adopted as more accurately descriptive of the reorganized association, and also because of the misunderstandings and misconceptions which have frequently occurred in connection with the words 'engineering' and 'committee.' The scope of the work is, however, being limited to those fields in which engineering methods apply."

The objects of the association, as stated in the new constitution, will be: to provide systematic means by which organizations engaged in industrial standardization work may cooperate in establishing American Standards in those fields in which engineering methods apply, thus avoiding duplication of work and the promulgation of conflicting standards; to serve as a clearing

house for information on standardization work in the United States and foreign countries; to further the industrial standardization movement as a means of advancing the national economy, and to promote a knowledge of, and the use of, approved American industrial and engineering standards, both in the United States and in foreign countries; and to act as the authoritative channel in international cooperation in standardization work, except in those fields adequately provided for by existing international organizations.

The revised Procedure of the committee, which forms a part of the general reorganization, and in which there is much more flexibility than formerly, is already in effect. Under the new procedure, a sectional committee may operate autonomously, reporting directly to the A. E. S. C., or it may act under a sponsor as heretofore. "Proprietary" standards are recognized and may be revised within a single organization on condition that it be shown that the standard is acceptable to the groups concerned—a method particularly applicable to highly specialized fields. In very simple cases, approval is based upon the action of a conference followed by written acceptances of the interested groups.

German Mills Increase Paper Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 9, 1928.—German paper and board mills report an output of 521,931 metric tons of paper and 108,171 tons of boards during the first three months of the current year as against 474,243 tons and 101,557 tons, respectively, during the corresponding three months last year, according to the Paper Division, Department of Commerce.

News print production, amounting to 122,734 tons, constituted the largest item in this years output, followed by other printing and writing papers with a mechanical groundwood content, amounting to 92,640 tons, wrapping paper (exclusive of greaseproof and imitation parchments amounting to 53,623 tons, and wood-free printings and writings to the amount of 41,419 tons.

Production of parchment, imitation parchments, and greaseproofs were somewhat less than during the first quarter of 1927, showing a decline from 14,271 tons to 12,356 tons.

The favorable conditions prevailing in the German paper industry are reflected in their increased dividend as declared by a number of the leading paper companies recently. Zellstoffabrik Waldhof-Mannheim, the leading German paper and pulp concern, at the annual board meeting on May 2 voted to propose at the general stockholders meeting a dividend of 12 per cent, which is the same as declared last year and an advance of 2 per cent over 1925. A. G. fuer Zellstoff and Papierfabrikanten, which ranks next to the Waldhof-Mannheim in importance, has voted to increase its dividend from 10 per cent in 1926 to 12 per cent for 1927. A dividend of 12 per cent is also being paid by Feldmuehle A. G. of Stettin, while Natronzellstoff A. G., Berlin, is maintaining its dividend of 10 per cent, and the Varziner Papierfabrik A. G. has announced its intention of increasing its dividend from 8 per cent to 10 per cent.

Gets $5,155.76 for Loss of Arm

CARTHAGE, N. Y., July 9, 1928.—One of the largest awards made to a paper mill worker since the Workmen's Compensation Law has been in effect was given Carlton Rice for the loss of an arm resulting from an injury received while at work in the plant of the Champion Paper Company. He was awarded by Referee James P. Richardson $5,155.76, an increased award of $19.73 a week for 312 weeks. The case had been on the calendar for some time and several witnesses were called before final disposition was made.

Insulating Board Factory Announced

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 2, 1928.—Establishment of a new industry to manufacture fiber and insulating board, was announced by the newspaper press of Portland, Oregon, June 26, for St. Helens, Ore. Unofficial report which is current in the district, states that the plant will probably be started in about six months, the first unit to cost $2,500,000. It will employ 225 men and will add a payroll of $350,000 a year to St. Helens industrial budget. The construction will probably take about ten months after the start.

Tom G. Taylor, pulp and paper financier of the Pacific Northwest, is named as temporary secretary-treasurer until the incorporation plans are entirely completed and board of directors chosen. H. F. McCormick is president; A. E. Millington is vice-president and general manager, and his son, Carl E. Millington, is to be superintendent and chief engineer.

Mr. Millington and his son are the inventors of the product to be made by the plant. It is called Fir-Tex which is the name given also to the new corporation. These men expended about $100,000 personally to bring their product to perfection in its use. Mill waste such as slabs, sidings, edgings and bark are utilized from spruce, hemlock, pine and other northwest woods. These are soaked, shredded and then the pulp rolled into board materials which can be cut any length desired. As stated two kinds of this board will be made, one product for building purposes and the other for insulation.

The only competitor of this plant, it is said, is a factory near New Orleans which manufactures boards of this nature. Mr. Millington was production engineer for this company for many years.

Contracts have already been made with the Clark-Wilson Lumber Company for raw material.

The site of the plant is about forty acres, which is of rocky formation and will therefore save money in foundation work, as little piling will need to be used. In addition there are about 280 acres additional in the entire property, which gives a water frontage and dock facilities that are adequate to shipping needs.

It is said that California uses 10,000,000 square feet of lumber substitutes each year in building construction, and the Pacific northwest 20,000,000 square feet. Insulating board is used at the rate of 12,000,000 feet a year in construction of refrigerator cars, it is stated.

To Investigate China Clay

[FROM OUR REGULAR CORRESPONDENT]

Washington, D. C., July 11, 1928.—Announcement has been made by the United States Tariff Commission that it has begun an investigation of China clay. It is explained that this investigation is being made under the general powers of the Commission and not as the result of any specific application, either for an increase or decrease in the tariff rate. When completed the report will be sent to Congress.

In connection with this survey, the Commission has assigned C. W. Mixter, R. T. Watkins, and B. A. Roberts, to visit a number of places in the southeast including Savannah, Ga., Edgar, Fla., and Langley, S. C. Later they will go to New York City it was announced.

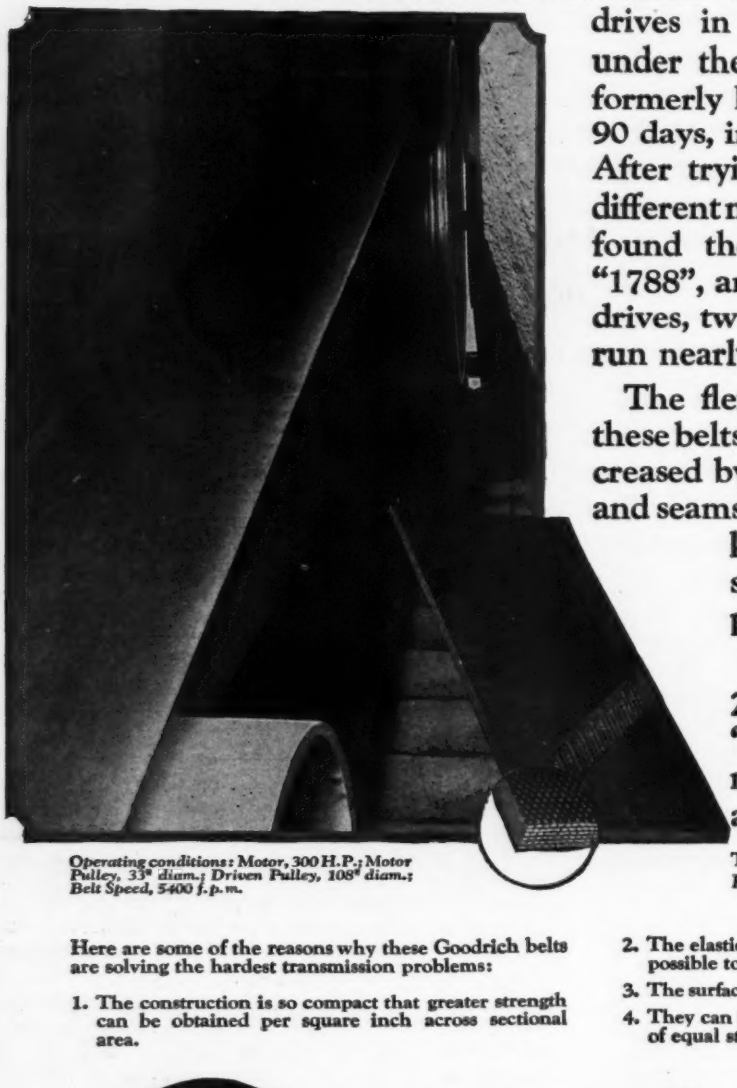
Bryant Paper Co. Installs New Generator

A thousand k.w. generator, capable of producing power per Killowatt, at one-forth previous costs, has been installed in the power plant of the Bryant Paper Company and after thorough tests, found to meet expected requirements, according to E. C. Rutz, power superintendent of the concern.

It is a special job from the Westinghouse Electric Company, built along lines and according to specifications, suggested by Bryant engineering staff. These suggestions were developed by the Westinghouse engineers.

THIS Belt has *Saved* $5,000!

The superintendent in charge estimates that this Goodrich 20" nine-ply "1788" belt has saved his company $4.75 per day during the 1200 days it has so far been in service. There are ten of these crusher drives in the mill, all operating under the same conditions. Belts formerly had to be renewed every 90 days, involving inordinate cost. After trying out belts of a dozen different makes, the superintendent found the solution in Goodrich "1788", and installed it on all ten drives, two of which have already run nearly 1000 days.



Operating conditions: Motor, 300 H.P.; Motor Pulley, 33" diam.; Driven Pulley, 108" diam.; Belt Speed, 5400 f.p.m.

The flexibility and durability of these belts have been still further increased by elimination of all folds and seams. The construction is now known as "1788 Highflex"; supplied in all widths and plies, open end or endless.

Write for Catalog Section 2105, which tells *why* "1788 Highflex" transmits more power at lower cost and cannot "bootleg."

THE B. F. GOODRICH RUBBER CO.
Established 1870 Akron, Ohio

Here are some of the reasons why these Goodrich belts are solving the hardest transmission problems:

1. **The construction is so compact that greater strength can be obtained per square inch across sectional area.**
2. **The elastic, long-lived friction is so flexible that it is possible to use more plies over a given size of pulley.**
3. **The surface retains its smoothness and driving power.**
4. **They can be made endless, with all parts of the belt of equal strength.**

Goodrich
"1788 Highflex" Belt

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Extraction Turbine Installation at Tyrone

As It Costs Very Little More to Make Steam at High Pressures Than at Low, Any Plant Using Process Steam Can Install Extraction Type Turbines and Secure Electric Power at Such a Slight Additional Cost That the Central Station Cannot Afford to Compete

By R. G. Heyl [1]

There are a number of industries such as rayon mills, pulp and paper mills, sugar refineries, and cloth converting, bleaching, and dyeing that requires large quantities of low pressure steam for the various steps in the manufacturing process. It usually happens that these industries are also large users of electric power to drive the machinery. This is an ideal combination of conditions. The electric power can be generated from extraction turbines acting as reducing valves to supply the low pressure steam. With this system properly developed, surprisingly cheap power can be generated, in most cases considerably cheaper than the central stations can afford to sell it.

It is the purpose of this article to give a general survey of an installation of extraction turbines at the Tyrone, Pa., plant of the West Virginia Pulp and Paper Co. The points to be considered are: the condition of the mill previous to the turbine installation; the selection of the correct steam pressure and turbines; the difficulties encountered; and the benefits derived.

The manufacturing of pulp and paper requires large quantities of low pressure steam for evaporating spent liquor, heating water and stock, drying paper, and the heating required in the buildings during the winter months. This heating is frequently quite an item, as pulp and paper mills are often located in cold climates.

The former practice at this mill had been to obtain some of the low pressure steam direct from the high pressure lines by means of reducing valves and some from steam engines driving various parts of the mill and exhausting at ten or fifteen pounds back pressure. Steam lines at boiler pressure ran to all parts of the mill, and wherever any low pressure steam was required, a reducing valve was installed.

This system was uneconomical. Electric power can be developed when reducing the steam and still use less than 15 per cent of the total available heat units. The remaining 85 per cent of the heat can be used in the process work. If the electric power is developed by condensing engines or turbines, none of the latent heat is available for process work, because the condenser water is never hotter than 100 degrees to 110 degrees F., which is much too cold to be useful unless additional heat is added by means of low pressure steam.

It is true that, when engines were used as reducing valves, power was developed, but the old style back pressure engines had a higher water rate than the modern bleeder turbines. Owing to the fact that there was no way to control the steam output from the engines, an additional loss was suffered. They either gave too much or too little exhaust steam. Consequently during periods of insufficient exhaust live steam was supplied, and during periods of excess exhaust steam was discharged to the atmosphere. Quite often it happened that the process operator had a preference for live steam and would use it, allowing the engine exhaust to blow to the atmosphere. When it is considered that there were many of these engines in the mill, the loss of heat to the atmosphere at times was very large.

During this period serious troubles were experienced in the boilers with the oily condensate recovered from the engine exhaust due to cylinder oil getting into the feed water. Considerable time and money were used to remove this oil, but very indifferent success was obtained.

The above conditions and difficulties influenced the management of the mill to install a bleeder turbine plant for the development of both electric power and low pressure steam. A comprehensive survey was made of the requirements for low pressure steam and electric power so the proper equipment could be installed to generate all the electric power and supply all the low pressure steam. It was decided to abandon all the old engines and install individual motors in each department.

Twenty pounds gage was found to be most suitable for the low pressure steam. A back pressure turbine of 1,250 kw. capacity was selected to supply somewhat less than the minimum of low pressure steam and to run as a base load unit. Another 1,250 kw. unit of the bleeder type was installed to carry the remainder of the electrical load and supply the fluctuating demand for low pressure steam. The excess steam required to develop power but not required for processes, of course, passes to the condenser.

The heat in the circulating water from the turbine condenser is not lost, for this water passes through the condensers of two cross compound Corliss engines generating low voltage electrolytic current where it is heated to an average of 125 degrees F. Then part passes through filters to boiler feed water makeup, and the remainder goes to process work in the mill. Hence, no heat is lost to the sewer from this turbine.

[1] Chief Engineer, West Virginia Pulp & Paper Co., Tyrone, Pa.

Later when more engines had been abandoned and the production increased, another bleeder type turbine of 2,500 kw. capacity was installed. The new turbine was constructed so low pressure steam could be inducted into it. This was found to be needless, because a very close control of the low pressure steam at all times was already accomplished.

Boiler Pressure Was Raised 60 Pounds

As the situation now stands, all electric power required to drive the motors is generated by turbines which also supply the low pressure steam. The pressure in the boiler room header was raised from 125 pounds to 185 pounds gage. All steam for process work and heating throughout the whole mill is now low pressure, with the single exception of cooking wood in the digesters, which is 125 pounds gage. In all sections of the mill the high pressure steam lines have been removed from the buildings, so the operators must depend entirely on low pressure steam to get out production. At present no troubles have been experienced in this regard.

The plant is not as yet in a complete heat balance. After all the low pressure steam has been supplied and all the heat practicable to use has been removed from the condenser water, it is found that the heat units from about 1,500 kw. developed condensing on the 2,500 kw. turbine are lost to the sewer.

To place the plant in a heat balance, the installation of two 800 hp. boilers generating steam at 425 pounds gage and high superheat is now under consideration. This steam would then pass through a turbine developing from 1,500 to 2,000 kw. which would reduce the steam pressure to between 185 pounds and 125 pounds. This would place the mill in a heat balance.

It must be understood that a pulp and paper mill has a twenty-four hour load which remains about the same for the full six days. However, there are certain fluctuations in the power demand and somewhat greater fluctuations in the low pressure steam demand. This being the case, it would be rather difficult to maintain an exact heat balance, but it can be kept close enough so no live steam need be passed into the low pressure line and little heat discharged to the sewer through the condenser water.

Old High Pressure Lines Were Too Small

Many troubles were experienced when the first attempts were made to use the low pressure steam throughout the mill. The first complaint was that it was impossible to get production and quality. Rather than affect quality or lose production, the departments were allowed to use some live steam. After considerable investigating and experimenting it was found in most cases the trouble was due to excessive drops in steam pressure. One of the mistakes had been to try to use the old high pressure steam lines in the buildings. While these were mostly ample for the 125 pound steam, they were usually much too small for the 20 pound line owing to the greater volume. It was also found that most of the steam inlets to the evaporators, tanks, heaters, and driers were too small to allow sufficient steam to enter. It was then decided to repipe the mill and enlarge all inlets to the various apparatus. An accurate check of the steam demands in all departments was made, and after making due allowance for future growth, a complete piping layout was drawn up. The lines were all properly proportioned and run in as direct a line as possible so no place would suffer a drop of more than 3 pounds in the low pressure system. However, this was not as expensive as it might sound. When it is remembered that the old high pressure lines had just grown, that they followed no definite layout, that they rambled everywhere, and that they needlessly paralleled each other forming a regular net work, the salvage from them was enough to construct all but the very largest of the new lines.

A Psychological Effect Had to Be Overcome

When this new system was gradually installed in one department after another, the high pressure was allowed to remain for a time in order to give the operators confidence. However, the use of high pressure was discouraged and the operators educated to use low pressure entirely. When this was accomplished, the high pressure steam lines were removed from the department. The changeover and education of the operators were gradual and covered a period of several years, until at present the high pressure lines have been removed from all the departments except the digester building.

During the changeover there was a gradual lowering of production costs. A comparison of costs before and after the change shows a decided drop in favor of the latter. The production of the mill has been increased 75 per cent, while the steam consumption has increased only 14½ per cent.

However, all of the economy cannot be credited to the use of bleeder turbines. Part of it must be credited to the removal of the old engines and their inefficient drives. Yet when all is considered, it was the development of the bleeder type turbine with its perfect control of the bled steam that made possible the successful elimination of the old system with its various reducing valves and reciprocating engines.

Sales to Various Departments

The power plant at this mill is run as a manufacturing plant with kw.-hr. and heat units for sale to the various departments. Both power and steam used by each department is metered so charges can be made each month. The cost of steam per 1,000 pounds is determined by considering all costs in the boiler house: coal, coal handling, ash handling, operating labor, repair labor, and repair material. These total costs are divided by the total net steam sent out of the boiler house.

Low Pressure Steam Is Charged at 85% of Cost

The digesters using steam at 125 pounds are charged full price as explained above. The remainder of the net steam is charged to the power house. All the low pressure steam delivered from the power house to the various departments is metered and charged to them as used. The rate they pay is 85 per cent of the cost of 1,000 pounds net steam. The difference between the steam charged to the power house and that portion used as low pressure steam is considered as having been required to generate the electric power. The difference between the cost of the net steam and the amount derived from the credit of the low pressure steam is divided by the net kw.-hr. generated to get the cost of a kw.-hr. the power house to the various departments is metered and for the month. The electric power to each department is metered by watt-hour meters and the department charged accordingly.

Works Well to Lower Costs

It has been found that this system works very well to lower costs. When the head of a department sees the monthly costs for steam and power, he usually becomes very careful in the use of them. It has also helped where it has shown steam or power costs to be out of proportion to the work done on the product. Efforts are then made to change the methods of manufacture to a more efficient use of steam and power.

Brittains, Limited, TAPPI Corporate Member

The first paper company in Great Britain to become a corporate member of the Technical Association of the Pulp and Paper Industry is Brittains, Limited, which operates the Cheddleton Paper Mills near Leek, Staffordshire, and the Ivy House Mills at Hanley, Staffordshire. Among the products of these mills are the following: pottery tissues, duplex and simplex litho transfer papers for ceramic color printing, thin gauze copyings, extra thin tin foiled condenser papers, interleaving condenser tissues, stereo, carbonizing, cigarette, silver, and other fine tissues. The company operates eight paper machines.

Alfred Haigh, managing director of Brittains, Limited, will be the representative of the company in the Technical Association. Recently Mr. Haigh has been visiting in the United States and Canada and has many friends in these two countries as well as in Great Britain. Brittains are the successors to the Fourdriniers after whom the paper making machine was named.

Schur's Freeness Indicator and Refining Control

Patent Review

By A. Papineau-Couture [1]

There is a saying current in the paper industry that "Paper is made in the beater." This is particularly true in the manufacture of fine papers; but even in the manufacture of such a low price grade as news print, the ever-increasing speed at which the machines are run makes it imperative to be able to closely control the freeness of the stock, which has considerable influence on the formation and strength of the sheet and on the proper operation of the paper machine. Under modern manufacturing conditions uniformity of the stock fed to the paper machine is of very great importance, and it is therefore not surprising that considerable thought and effort has been devoted to the problem of eliminating the personal equation which at present plays such an important part in beating and refining.

The question could not but attract attention of the research staff of the Brown Company. Milton O. Schur, whose numerous contributions to the improvement of pulp and paper technology are well known in the industry, has developed a freeness indicator based on entirely new principles and has applied it to the control of jordan engines so that the latter automatically produce a stock of uniform freeness. The description of this device, which has been published in the specifications of United States patent 1,653,125, of December 20, 1927, will doubtless be received with considerable interest by paper technologists.

Principle of the Instrument

The principle of the invention is as follows: a portion of the stock from the refiner is sent continuously to a vat containing a rotating cylinder mold whereon is deposited a layer of fibers. A mathematical analysis of the process whereby a pulp may be picked up on a cylinder mold, together with an experimental investigation, have shown that, within certain limits, if the rate of flow of white water is multiplied by the thickness of the pulp mat, when the latter has been subjected to a standardized pressure, the product is practically constant for pulp of a given quality and may be considered to be a direct measure of slowness or freeness, provided that the rate of rotation of the cylinder mold and the hydraulic head, temperature and consistency of the stock are kept constant. Or, if the stock consistency and hydraulic head are kept constant and the temperature is constant or compensated for, the slowness of the stock may be determined by measuring either the thickness of the pulp mat or the rate of flow of the white water.

In the apparatus illustrated herewith the rate of flow of the white water and the thickness of the mat on the cylinder are both measured; and by means of an indicating or recording instrument these two factors are multiplied one by the other to give a reading which is an indication of the freeness, and hence of the slowness, of the stock. It may be here pointed out that, since slowness is the reciprocal of freeness, any indication of the one is an indication of the other, and that either may be used to express the characteristics of the stock; but it is understood that the thickness of the mat picked up by the wire, the rate of flow of water through the mat, or the product of the thickness by the rate of flow are proportional directly to freeness and inversely to slowness. Also, provision is made by which the operation of the jordan is automatically controlled by the devices which measure the rate of flow of the white water and thickness of the pulp mat on the cylinder mold, so as to ensure a predetermined slowness of the stock. The stock from the jordan is also passed through a consistency regulator before being delivered to the instrument, so that the latter will not be affected by variations in the consistency of the refined stock. Variations in the temperature of the stock due to external conditions are either compensated for, or the temperature of the stock in the vat of the instrument is maintained constant. Means are also preferably provided for maintaining a constant hydraulic head of the stock in the vat in measuring the rate of flow of the white water through the mat.

[1] Member TAPPI

Measuring the Thickness of the Pulp Mat

(20) represents conventionally a jordan engine to which the stock is delivered by a conduit (21) and from which the beaten stock is delivered from a conduit (22) to the paper machine chest. Interposed in this conduit is the box (23) having a valve (24) controlling the port through which the stock is delivered to the vat (25) of the instrument. The valve is operated by the diaphragm of a diaphragm motor (26) through a lever (27) pivoted at (28). The stock delivered past the valve is received by a funnel (29) and delivered through a standpipe (30) into the vat (25), in which is a cylinder mold (31) preferably consisting of a bronze shell rotating a stationary tapered bronze plug (32). The shell is provided with a large number of equally spaced radially disposed longitudinal slots which widen or diverge outwardly to form knife edges at the periphery of the roll, about which a screen or strip of fourdrinier wire (31') is tightly wound. Preferably, the screen or wire is formed in a narrow strip which is wound helically about the outside of the roll with the edges of the convolutions abutted together so as not to present any protuberances on the surface of the mold. The shell of the mold and the plug have a ground and lapped fit so as to form an air-tight and watertight joint between them. The plug is recessed between its ends to form the chambers (33) and (34), as shown in Figure 3, between it and the shell of the cylinder mold. The ends of the plug are provided with reduced hollow hubs (35), (36), which are secured against rotation in the uprights (37), (38) of a frame located in the vat (25), this frame being provided with a base (39) as best shown in Figure 2. The plug is held against rotation by cap clamps (40), (41). The cylinder mold is rotated at a constant speed by any suitable mechanism, such as the worm wheel (42) (see Figure 2) secured to the hub of the cylinder mold and arranged within housing (43)

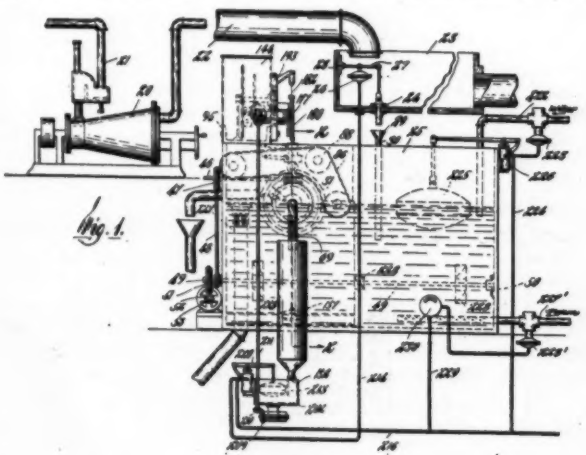


FIG. 1

Slowness Tester Embodying the Invention. In this Figure the Jordan is Shown on a Small Scale as Compared with the Scale of the Testing Apparatus.

secured to brackets (44) rising from the base (39) of the frame, the worm wheel meshing with the worm (45) mounted on shaft (46) which is driven from shaft (53) as shown in Figure 1.

In order to adjust the plug axially relatively to the cylinder mold so as to compensate for wear and maintain a water-tight joint, plug clamps (54), (55) are placed on the threaded portions of the hubs (35), (36) and bear against the ends of the cylinder mold. Each clamp nut is split and its sections may be drawn together by bolts (56), (57), thereby tightly clamping the nuts on the hubs. On the mold and overlapping that part of the wire which is soldered to the non-slotted end portions of the shell are the two rubber deckles (60), (60), one of which abuts against a circular flange (61) on the shell while the second abuts against a removable ring (62) which is placed on and secured to the end of the shell after the deckles have been placed in position.

The two hubs (35), (36) of the plug are hollow, the interior of hub (36) communicating with the chamber (33) by the port (63), and the hollow interior of the hub (35) communicating with the chamber (34) by the port (64). The level of the stock in vat (25) is kept at the axis of the cylinder mold and the plug (32), and the plug is so arranged that the chamber (34) is above the level of the stock and the chamber (33) is below it. Suction is maintained in both these chambers as the cylinder mold is rotated so that the water which passes through the pulp mat formed on the wire (31') and through the slots in the shell of the cylinder mold flows out through the hub (36). It is desirable to maintain a negative pressure in chamber (34) for the following reasons: (a) to prevent any possibility of the leakage of air from this chamber past the joint between the shell of the cylinder mold and the plug into the chamber (33); (b) to hold the mat on the wire as the latter rises above the level of the suspension in the vat; and (c) to prevent the mat from being picked up and removed by an apron which will be subsequently explained and which engages the mat during a portion of its travel.

Vacuum Production

The means shown for producing the vacuum consists of the Sprengel air pump or aspirator (78) connected through pipe (80) tank (77) and pipes (76), (74) and (75) to the hollow hubs, as best shown in Figure 2. Since the same source of vacuum is used for both, it follows that the two chambers are kept under the same vacuum. The hub (36) is connected by a gland and stuffing box (65) with a sectional conduit (66), the section (67) of which is formed of glass so as to permit an observation of the flow of water through the conduit. The conduit is provided with an elbow (68) and with a vertical leg (69) which delivers the water to a meter by which the rate of flow of the water is determined. The other hub (35) is provided with a T-fitting (70) into which is screwed a plug (71). The fitting (70) is provided with a depending leg (72) which is slightly longer than the leg (69) and which extends below the level of water in a cup or other receptacle (73). The pump (78) is used to start the flow of water from chamber (33) to the measuring device by which the rate of flow of water passing through the mat is measured.

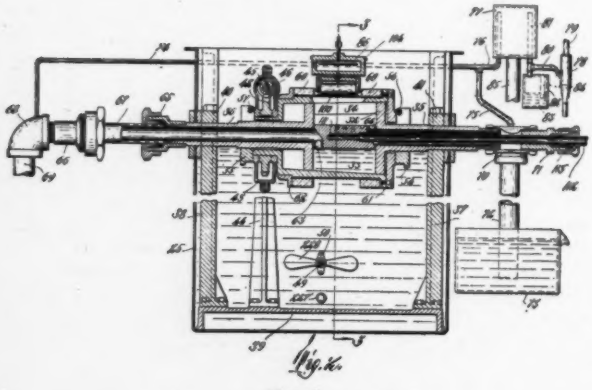


FIG. 2

A Section on the Line 2-2 of Fig. 1.

As the pulp is locally compressible, it is desirable that the means for measuring the thickness should engage a relatively large area thereof so that its pressure will be exerted upon such area, and it is therefore convenient to use a flexible apron such as indicated at (86). This apron should be made of material which will not corrode, which is sufficiently flexible for the purpose, which itself is substantially non-compressible under the pressure utilized in effecting the measurement of the thickness of the mat, and which is preferably transparent so that the operation of the machine may be observed. An apron of thin celluloid was found to possess the optimum properties. This apron is guided by three rolls (87), (88), (89), arranged as best shown in Figure 3, so that it remains in contact with the stock through an arc of approximately 90°. The rolls (87) and (89) are journaled in a pivoted frame comprising two end plates (90) (one only of which is shown in Figure 3) secured together by bolts (91) and held apart by spacers (92). The frame as a whole is journaled on a fulcrum consisting of a pipe (93), the ends of which are attached to brackets (94) depending from the bridge (95) connecting the end uprights (37), (38) of the main frame in the vat (25). The roll (88) which functions as a belt tightener as well as a guide, is journaled at each end in a block (96) adjustable in a guideway (97) by means of an adjusting screw (98) journaled in a boss (99) formed on one of the end plates (90). The proportions of the parts are so chosen that, within the limits of thicknesses of pulp encountered in practical operation, the pressure exerted by the apron against the mat is substantially constant and reproducible.

Bearing upon the apron (86) there is a roll (100) whose axis is paralled to and in the same vertical plane as that of the cylinder mold. This roll is mounted so as to yield as the apron travels beneath it, and it is journaled in the arms (101) of a yoke (102) which bears against a cylindrical fulcrum (103) socketed in a rectangular frame (104). The yoke (102) is held loosely in place by angle bars (105) secured to the frame (104) by screws (106). With this arrangement the roll (100) is capable of tipping more or less about the axis of the fulcrum (103), in setting up the machine. The frame (104) is guided in its vertical movement by two pairs of parallel links (107), (108). These pairs of parallel links are pivoted to lugs (109), (110) depending from the bridge (95). Preferably, the links of one pair, as those at (107), are extended beyond their pivots sufficiently to just about counterbalance the weight of the frame and the roll (100) without, however, lifting the roll from the apron. By multiplying the movement of the frame (104) the thickness of the mat may be indicated on a suitable scale.

Cleaning the Cylinder Mold

For the proper functioning of the cylinder mold and its associated parts, including the apron (86), that portion of the mat which passes under the apron must be properly stripped from the cylinder, and provision must be made for preventing the adhesion of the pulp to the surface of the apron. The center of the plug (32) is hollow, as at (111), and with it communicates a pipe (112) which is passed through a stuffing box (113) on the end of the plug (71) so that water may be introduced into the interior of the plug and delivered through passages (114) to what may be regarded as a manifold (115), as shown in Figure 3. From this manifold a narrow slit (116) delivers a stream of water to and through the series of slots in the shell of the cylinder mold to wash the pulp mat off the

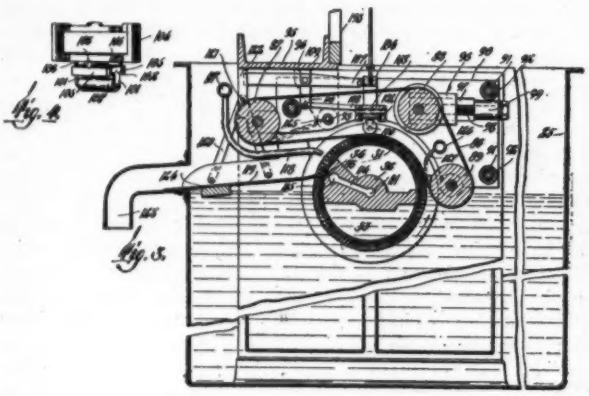
screen. At the same time, a supply of water is delivered through a pipe (117) to a series of nozzles (118) by which small streams of washing water are delivered to the outside of the cylinder mold just above the mouth (116). The function of the jets of water delivered from the nozzles (118) is to cut the web of pulp into ribbons which are lifted and removed from the wire by the water issuing from the mouth of slit (116).

A doctor (119) is hung by the angle links (120) to a pivot bar (121) held in depending lugs (122) extending down from the bridge (95). The front edge of this doctor (which is more or less trough-shaped in cross section in the rear of this edge) is held yieldingly in close proximity to the surface of the cylinder mold between the deckles so as to receive the pulp which is removed from the cylinder mold and to discharge it through outlet (123). The front ends of the sides of the doctor ride on the surfaces of the deckles so as to maintain the operative edge of the doctor just sufficiently clear of the the wire not to injure the latter, but sufficiently close to receive the stock which has been washed off. Its construction is such that, if, due to a temporary interruption in the flow of water to pipe (117), or for some other reason, the mat should stick to the screen, and thus tend to jam in between the doctor and the cylinder mold and thereby injure the screen, the doctor will be pushed away from the cylinder mold by the rotation of the latter until the cause of the failure of the stock to be washed completely away has been removed. The weight (124) then brings the doctor back into its normal position.

It is apparent from the preceding description that, when the cylinder mold is being rotated at a uniform speed, a mat of fiber is constantly being formed on the cylinder mold and carried between the mold and the apron (86) beneath the roll (100), and that the roll and its frame (104) will be raised and lowered according to the thickness of the mat. As the slowness of the stock increases, the less will be the thickness of the mat, provided the consistency of the stock in the vat is constant and that the temperature of the stock does not appreciably vary.

Metering the White Water

In Figures 9 to 12 inclusive is illustrated one form of meter which may be used to measure the rate of flow of the white water from the cylinder mold. It consists of an upright tank (130) of any predetermined height, having at its lower end a thimble (131) with a reduced delivery orifice (132). The pipe (69), which receives the white water from chamber (33) of the plug in the cylinder mold, delivers the white water into a seal cup (133) at the side of the tank (130) from which the water flows into the tank at one side of the partition (134), which extends into the lower part of the tank. A sight glass (135) is connected to the thimble (131), adjacent to which there is placed a graduated scale (136). The rate of flow of the water in the orifice (132) from tank (130) varies with the hydraulic head of the water in the tank, so that, if the column in the tank increases in height, water will flow through orifice (132) at a higher rate; and conversely, as the column of water in tank (130) decreases, the rate of flow of water through orifice (132) will decrease; so that by noting variations in the height of the water column in the sight glass (135), it is possible to ascertain the rate of flow from the cylinder mold. An equilibrium is established between the rate of flow of white water from the cylinder mold into tank (130) and the rate of flow of water from the tank through the reduced nozzle (132), and the height of the water column in the tank remains constant during the time that this equilibrium remains constant. By placing a float, such as (137), in tank (130) and noting variations in the vertical height of this float, the rate of flow of white water through the tank (130) may be indicated.



FIGS. 3 AND 4

Fig. 3—A Section on the Line 3-3 of Fig. 2. Fig. 4—A Perspective View Illustrating the Frame and the Roll Thereon Which Bears Against the Apron Forming a Part of the Slowness Tester.

Freeness Indicator and Recorder

The indicating and recording mechanism by which the thickness of the mat and the rate of flow of white water are multiplied one by the other so as to indicate the slowness of the stock is illustrated in Figures 6, 7 and 8, and comprises a rotatable dial (138) on which is marked a logarithmic scale (139). The hub of the dial is mounted to rotate freely about a shaft (140) which is journaled at its end in bearings (141), (142) in a suitable case or cabinet (143), one side (144) of which is glazed so that the dial may be seen. An index finger (145) is secured to the shaft (140) so as to rotate therewith, and this finger extends across the logarithmic scale and is provided with an opening (146) through which the scale may be seen in connection with a mark or center line (147) on the finger. Both the dial and the index are movable about the same axis, each independently of the other, the position of the one depending on the rate of flow of the white water from the cylinder mold and the position of the other depending on the thickness of the fiber mat on the cylinder mold.

Securely connected to the shaft (140) on which the index (145) is mounted, there is a cam (148) against which bears a slide or pusher (150) moveable along a guide rod (151) mounted in uprights (152) placed on the base or cabinet of the instrument (which may be formed by the bridge (95)). To the hub of the dial (138) there is secured a cam (153) so that the two will move together, and with the edge of the cam there is engaged a slide or pusher (154) moveable along a guide rod (155) whose ends are secured in the upright brackets (152). The two guide rods (151), (155) are in the same horizontal plane, as shown in Figure 7. The cam slide (150) engages the feed screw (156) journaled in the upright brackets (152), and the cam slide (154) similarly engages feed screw (157) mounted in like manner. On the end of the feed screw (157) is a small pinion (158) intermeshing with and driven by a large gear (159) journaled on a stub shaft and having secured to one of its faces a drum (160). Secured to and coiled around the drum is a cord (161) to which the float (137) is attached, while the other end is provided with a weight (162), so that, as the float moves up and down according to variations in the height of the column of water in the water-meter tank, the screw bar (157) will be rotated in one direction or the other by the drum and gearing so as to feed along it the slide or pusher (154), which, by reason of its engagement with the cam (153), will move the dial (138) in one direction or the other about its axis.

As the order of magnitude of the movement of the thickness-measuring roll is very small and likewise the force available

for operating any micrometer device, it is preferable to employ for the purpose of moving the dial of the measuring instrument a separate source of power controlled by the measuring roll. In the present illustration an electric motor having an armature rotatable in one direction or the other according to the supply of current to the field may be utilized for the purpose. Such a motor is indicated conventionally at (163) and the current therefore may be supplied by a generator indicated conventionally at (164). The rotor of the motor is provided with a pinion (165) intermeshing with and driving a gear (166) on the feed screw (156). By causing the rotor of the motor to rotate in one direction or the other, the feed screw (156) may be correspondingly rotated so as to advance or retract the slide (150), and, by engagement of the latter with the edge of the cam (148), move the index (145) about its axis relatively to the dial (138). The field of the motor conventionally illustrated at (168) and it is connected to a shunt (169) across the armature circuit which is provided with the resistances (170), (171). The field (168) is connected in multiple with two movable contacts (172), (173), indicated conventionally in Figure 6, but shown in actual construction in Figure 8. At (174), (175) are contacts respectively associated with those at (172), (173), but between which are the spark absorbing resistance shunts (175), (176), as indicated conventionally in Figure 6. The spring contacts (172) and (173) are normally disengaged from their associated contacts (174), (175), so that the rotor of the motor is stationary. Now if, for example, contact (173) is closed against contact (175), current flows in one direction through the field so as to cause the rotor to be rotated in one direction; whereas, if the other contacts (172), (174) are closed, current will flow through the field in the opposite direction and the armature will therefore be rotated in the direction opposite to that in which it was previously rotated.

The contacts (173), (175) are closed or opened under the control of the measuring roll (100). The frame (104) of this roll is connected by a link (177) with one end of a floating lever (178) (see Figure 8), the other end of which is connected by a thin leaf spring (179) with an arm (180) on a nut (181) forming a part of a device which for convenience may be called the "hunter." The floating lever (178) is provided with a rigid fork (182) which engages a pin (183) on a switch closer (184) pivoted at (185) between the two pairs of contacts (173), (175) and (172), (174). It is readily seen that a change in the position of roll (100) will move link (177) up or down, as the case may be, thus moving one or other of the contacts (172), (173) into engagement with its associated contact closing the circuit through the field of the motor and causing the rotor to be rotated in one direction or the other: it thus moves the slide (150) along its guide bar (151) and through the associated cam (148) it moves the index (145).

The nut (181) to which the spring (179) is secured is threaded on an upright screw bar (190), the nut itself being held against rotation by a guide bar (194) with which it is in sliding engagement. The screw bar (190) is provided with a worm wheel (195) engaging a worm (196) on the feed screw (156) which is driven by the motor. When the motor is started in one direction or the other by the closing of one or the other pair of contacts (173), (175) and (172), (174), the rotation of the screw bar (156) not only effects the movement of the slide or pusher (150) and the movement of the cam (148), but it also causes the rotation of the upright screw (190) so as to feed the nut (181) up or down, as the case may be, a sufficient distance to swing the floating lever (178) about its fulcrum on the end of the link (177) and break the contact. For example, assuming that the link (177), because of the change in the thickness of the pulp mat, has dropped sufficiently to cause the fork (182) to move to the right in Figure 8 far enough so that the switch closer (184) has engaged the contact (173) with the contact (175) and has started the rotation of the rotor of the motor in a direction so as to cause the slide (150) to be moved slowly to the left through the rotation of the screw bar (156). This rotation of the screw bar is imparted to the worm wheel (195) to rotate the screw bar (190) in a direction to move the nut (181) downwards. The downward movement of the nut soon causes the yoke (182) to be moved to the left so as to open the circuit between the contacts (173), (175), whereupon the motor ceases operation. If, because of temporary increase in thickness of the mat the link (187) is raised so as to close the circuit between the contacts (172), (174), the motor will be operated to move the slide (150) to the right and also to rotate the screw bar (190) in a direction to raise the nut (181) sufficiently to break the circuit between the two contacts (172), (174).

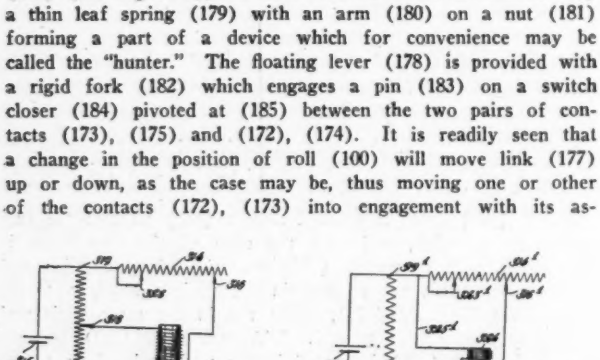
From this description it will be seen that a variation in the position of the float in the water meter and a variation in the position of the measuring roll will independently cause the dial and the index to be moved relatively to each other.

In order to prevent any breakage of parts in the event that any of the elements of the circuit-making and breaking mechanisms should stick and the motor should continue to rotate in one direction or the other after being started, the slide (150) is provided with a pin or projection (197) adapted to engage the circuit breakers (198), (199), placed near the ends of the limits of travel of the slide.

Adjusting the Instrument

In first setting up the instrument, a scratch or mark is made on the guide rod (151) with which the cam pusher (150) registers to indicate the proper relative position of the parts. Then, in case it becomes necessary to change the apron (86) or to make other replacements in the operating parts, a template of known thickness is placed between the measuring roll (100) and the apron (86), the main switch (200) is closed, and the motor is allowed to rotate until the cam pusher (150) comes to a state of rest. Then the switch (200) is opened, the coupling (167) is loosened, and the template is removed from between the roll (100) and the apron, and the threaded end of the feed screw (156) is rotated by hand until the slide (150) again registers with the mark on the guide rod (151), after which the coupling is again fastened. This operation has the effect of restoring the proper relationship of the cam (148) and the thickness-measuring roll.

The flexible connection (161) from the drum (160) to the float (137) in the water meter is made in relatively adjustable section which may be connected by a turn-buckle (201). The cam pusher (154) may be calibrated by placing a mark on the guide rod (155),



FIGS. 5, 16 AND 17

Fig. 5—A Method of Making the Cylinder Mold by Winding the Wire or Screen Helically on a Suitable Frame. Figs. 16 and 17—Diagrammatic Representation of Alternative Electric Means for Maintaining a Given Consistency of Stock in the Vat of the Testing Apparatus.

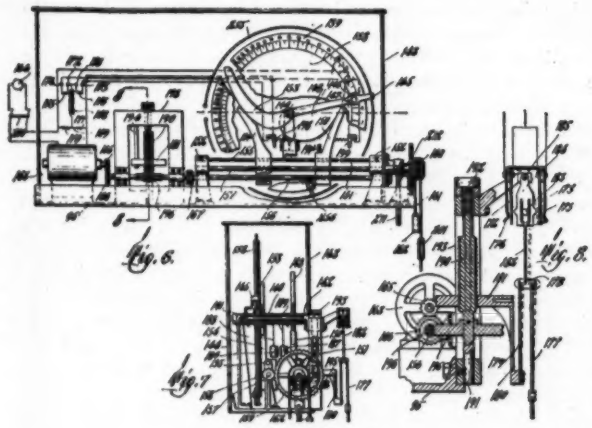
and, in the event of any stretching of the flexible connection (161) or of wear of the parts, the outlet from the meter may be temporarily plugged and water added until the float (137) has assumed a predetermined position, whereupon the turn-buckle (201) may be adjusted until the slide (154) reaches the mark on the rod (155).

Instead of operating the feed screw (157) (which moves the slide (154), and hence the cam (153) and the dial (138)) directly by the connection of the meter float (137) with the drum, a reversible electric motor and circuit controlling mechanism, such as employed for operating the feed screw (156), may be employed and controlled by the float, in the event that it be desired to magnify to a greater extent the movement of the float in transmitting motion to the indicating or recording mechanism, or to eliminate slight errors otherwise existent and which are due to friction in the rotative and sliding members actuated by the motion of the float.

Regulating the Consistency of the Stock

The instrument as above described is designed to indicate the relative slowness of the stock where the consistency of the stock in the vat is variable. If, however, the consistency of the stock be kept constant, the freeness may be measured either by the thickness of the pulp mat on the cylinder mold, or else by the rate of flow of the white water, for the thickness and rate of flow are mutually correlated under the conditions of the test. For this purpose the water delivered from the reduced orifice (132) of tank (130) of the water meter is received in a tank (202) (see Fig. 9) provided with a discharge port (203) of the shape shown in Fig. 10. Cooperating with this outlet is the segmental valve (204) which may be rotated about its axis to vary the effective area of the port (203). The valve spindle (205) is provided with a worm wheel (206) with which intermeshes worm (207), mounted on shaft (208) which is driven by bevel gears (209), (210), the latter being mounted on shaft (211), having on its end a bevel gear (212) (see Fig. 6) which intermeshes with and is driven by the feed screw (156). Since feed screw (156) is rotated in one direction or the other according to variations in the thickness of the pulp mat on the cylinder mold, it follows that as the thickness of this mat increases or diminishes, gate valve (204) will be moved in one direction or the other to vary the effective area of port (203). The connections are such that an increase in the thickness of the pulp mat increases the opening of port (203); and conversely, as the thickness decreases the port opening is diminished.

In tank (202) is a float (213) which controls an air valve in an air pressure line by which the admission of stock to the vat may be controlled. It will be remembered that the box (23) in the pulp conduit from the jordan was described as being provided with a valve (24) controlled by the diaphragm of a diaphragm motor (26). Air is admitted to one side of the diaphragm by a pipe (214) (see Fig. 1) from a valve controlled by the float (213). The valve casing is shown at (215) (Fig. 9) and the construction and operation of the valve is readily understood from Figure 12. An accumulation of water in tank (202) (indicating that the rate of flow of water through the cylinder mold is higher than corresponds to the thickness of pulp mat which would have been experienced if the consistency in the vat were of the proper, predetermined value) operates to gradually open the gate (24), increasing the flow of stock from the box (23) into the tank and raising the consistency of the stock in the vat. This in turn increases the thickness of the mat picked up by the cylinder mold and decreases the rate of flow of water from the cylinder mold. As the thickness of the mat increases it causes the feed screw (156) of the indicating instrument to rotate, and the valve (204) is gradually opened, thereby permitting an increased rate of flow of water from the tank (202). At the same time, however, there is a decreased rate of flow of water from the meter tank (130) to the float tank (202); and as a result of these operations the float (213) falls with the decrease of the head of water in tank



FIGS. 6, 7, AND 8

Fig. 6—The Indicating Portion of the Testing Apparatus Which Indicates the Slowness of the Stock. Fig. 7—An End View of the Indicating Portion. Fig. 8—An Enlarged Section on the Line 8-8 of Fig. 6 and Illustrates Means for Controlling the Circuit of the Motor Which Forms a Part of the Indicating Mechanism.

(202) until an equilibrium is established between the supply of stock to the vat and the rate of flow of water from the cylinder and the thickness of the pulp mat on the cylinder mold.

If the consistency of the stock in the vat is too high, clear water is admitted through the pipe (222) provided with a diaphragm motor valve (223). Admission of the air to the diaphragm valve from a pipe (224) leading from the compressed air pipe (216) is controlled by a float (225) in the vat (25) which operates an air valve (226), and which is substantially the same in construction as the air valve illustrated in Figure 12. The construction is such that if the level of the stock in the vat drops below a certain height the air valve (226) is opened to cause the admission of air to the diaphragm valve (223) and thus permit the flow of water into the vat until the level of the stock is sufficiently high to cause the closing of the diaphragm valve (223). The parts are so adjusted that normally the float-controlled air valve permits a more or less continuous supply of water to the vat at a rate sufficient to compensate for the outflow of water through the cylinder mold plus a slight overflow of water and stock from the vat through the overflow standpipe (227). Preferably the upper end of the overflow pipe (227) is adjusted so as to constantly permit an overflow and thus ensure a sufficiently rapid circulation of the stock in the vat. In addition, agitators (228) are provided to keep the stock thoroughly mixed.

Compensating for Temperature Variations

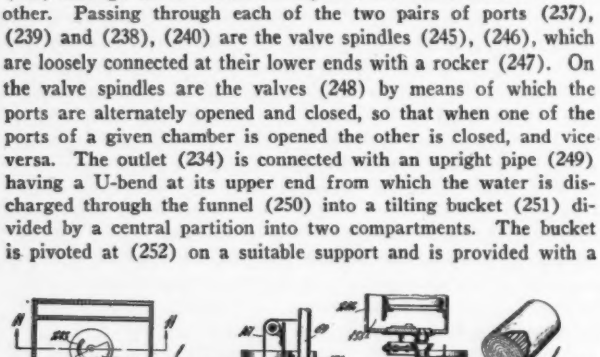
As water varies in viscosity with changes in temperature, either such changes must be compensated for or the stock must be maintained at a constant temperature in order to secure the most accurate slowness results.

The stock may be maintained at a predetermined temperature by heating it to a temperature somewhat above the temperature fluctuations of the stock under different normal external thermal conditions. It may be heated either by a steam coil or by steam delivered into the vat below the level of the stock through pipe (227'), the passage of steam into the vat being controlled by a diaphragm valve (228') (see Fig. 1). This diaphragm valve is connected with the air pressure pipe (216) by a branch pipe (229) in which is interposed a temperature responsive relay (230) exposed to the temperature of the stock in the vat. Preferably the instrument may be adjusted to maintain the temperature of the stock in the vat at a moderately low point, say about 100 degrees F.

Instead of keeping the stock at a constant temperature, however, the latter may be allowed to vary according to different external thermal conditions, and such variations are compensated

for by using the water meter illustrated in Figures 13, 14 and 15 instead of the one shown in Figure 9. Before describing this meter, it may be mentioned that, when the pulp mat is formed on the cylinder mold, the passage of the water therethrough is as though it passed through a mass of capillaries. The flow of water through capillaries, as is well known, depends not only on the dimensions of the capillaries and on the head of water, but also on the viscosity of the water. Consequently, as the temperature of the water varies and the viscosity of the water changes correspondingly, the flow through the capillaries varies. It is for this reason that the temperature of the stock in the vat must either be kept constant, or, if allowed to vary, the changes in the viscosity of the aqueous component of the stock must be compensated for. This compensation is obtained by causing the white water to flow through a mass of capillaries comparable to the pulp mat; but due to the fact that white water may carry with it fibrillae and fiber fragments, the capillaries would in time become clogged unless provision is made for periodically reversing the flow of the white water through the capillaries.

In Figure 13 the tank (202), previously described in connection with the meter illustrated in Figure 9, is arranged to receive the white water directly from the cylinder mold. The water from this tank is then delivered to a meter comprising a vertical tube (231) in which is located the float (137) connected by the flexible connection (161) with the drum (160) of the indicating instrument. The lower reduced end of the tank (231) is connected by a port (232) with a casing (233) having an outlet (234) near the lower end. This casing is horizontally divided by two partitions (235), (236). The partition (235) is provided with two ports (237), (238), and the lower partition (236) has the ports (239), (240). Inside the casing between the partitions and dividing it into two chambers (241), (242), there is a mass of capillaries (243) through which the water may flow from one chamber to the other. Passing through each of the two pairs of ports (237), (239) and (238), (240) are the valve spindles (245), (246), which are loosely connected at their lower ends with a rocker (247). On the valve spindles are the valves (248) by means of which the ports are alternately opened and closed, so that when one of the ports of a given chamber is opened the other is closed, and vice versa. The outlet (234) is connected with an upright pipe (249) having a U-bend at its upper end from which the water is discharged through the funnel (250) into a tilting bucket (251) divided by a central partition into two compartments. The bucket is pivoted at (252) on a suitable support and is provided with a fork (253), the fingers of which engage an arm (254) hanging down from rocker (247). It will readily be seen that by means of this construction the ports (237), (238), (239) and (240) are alternately opened and closed automatically so as to periodically reverse the direction of flow of the white water through the capillaries (243).



FIGS. 9, 10, 11, 12, 13, 14 AND 15.

Fig. 9—Means for Measuring the Flow of White Water from the Cylinder Mold of the Tester and Also for Controlling the Consistency of the Stock in the Vat. Fig. 10—An Enlarged Section on the Line 10-10 of Fig. 9. Fig. 11—A Section on the Line 11-11 of Fig. 10. Fig. 12—The Float-Controlled Valve by Means of Which the Head of Stock in the Vat is Kept Constant. Fig. 13—Another Form of Device for Measuring the Rate of Flow of White Water from the Cylinder Mold. Fig. 14—A Side Elevation of Device Shown in Fig. 13. Fig. 15—A Conduit Consisting of a Cluster of Capillaries in the Measuring Device of Fig. 13.

The capillaries are shown in Figure 15 as being formed of a number of thin tubes, indicated conventionally at (254'), fitting one inside the other, the outer surfaces of each tube being provided with fine longitudinal grooves which constitute capillaries. When these tubes are nested together they may be inserted in a cylindrical aperture formed in the casing between the chambers (241) and (242).

It is thus evident that the head of water in tube (231) depends not only on the rate of flow of white water but also on its viscosity. The warmer the water, and hence the lower the viscosity, the more rapid will be the rate of flow through the meter for a given hydraulic head in tube (231). This increase in rate of flow due to the decreased viscosity of the water compensates for the increased rate of flow of the water of the stock through the fiber mat on the cylinder mold. The head of water in the tube (231) consequently represents the rate of flow of water through the pulp mat in reference to a predetermined standard viscosity of the water. Hence the effect of temperature variations on the rate of flow of the water through the mat is automatically eliminated.

Recording the Freeness

In order that a continuous automatic record may be made of the slowness of the pulp an electrical resistance (255) (see Figure 6), made of nichrome, German silver, or the like, partially encircles the dial (138) and is concentric with it. The index (145) and the dial (138) are made of conducting material and each is provided with a brush or finger engaging the wire (255), the index (145) being long enough so that its end makes contact directly with wire (255) while the dial (138) is provided with a finger (256) for this purpose. The dial and the finger are insulated from each other and they are arranged in a circuit shown conventionally in Figure 18 as comprising the conductors (257), (258), which are connected with the index and the dial, respectively. The resistance conductor (255), which is of uniform resistance throughout its length, is arranged in a circuit comprising a battery, or other source of current (259), and a variable resistance (260). Indicated conventionally at (261) is a recording potentiometer provided with a stylus (262) arranged to mark on a clock-driven chart (263). The local circuit of this potentiometer includes a battery or source of current (264) and a variable resistance (265). In operation, when there is a variation in the potential between the conductors (257), (258) by reason of the movement of the index (145) and the dial (138) towards or from each other along resistance wire (255), the stylus (262) of the potentiometer is automatically operated correspondingly so as to record its movement on the chart (263).

Instead of having two batteries for the local circuits, a circuit arrangement might be employed having a single battery (259'), as indicated in Figure 19, in which case one might obviate the use of one or both of the variable resistances (260), (265), since variations in voltage from the source of potential would affect both circuits equally.

Figure 21 illustrates diagrammatically another form of recording or indicating mechanism, by which it is possible to obviate the use of the two logarithmic cams (148), (153), of the indicating mechanism. In this instance there is provided a resistance coil (266) along which a contact (267) may be moved by the mechanism under control of the thickness-measuring roll, for instance by the part utilized as the cam pusher. The resistance (266) is included in a circuit comprising a battery or other source of current (268), the potential of which is maintained at a predetermined value. Connected with one of the conductors (269) there is an-

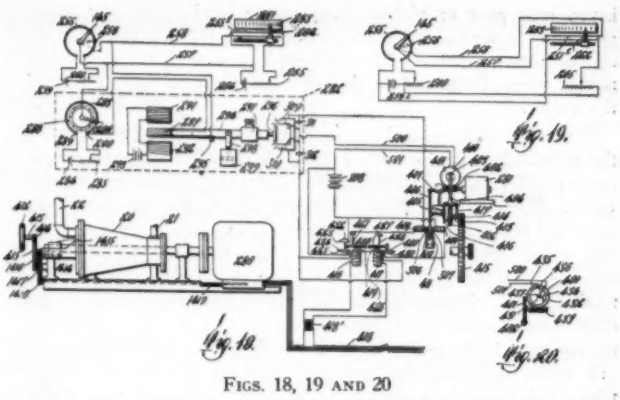
other resistance coil (270) along which a contact (271) is moved by variations in the position of the float of the water meter. One end of the resistance coil (270) is connected by conductor (272) with the contact (267) and the same end of the resistance coil is connected by conductor (272) with a terminal (273) of an indicating or recording potentiometer or voltmeter. The other terminal (274) of this instrument is connected by a conductor (275) with the contact (271). The resistance coil (266) is of uniform resistance per unit of length. The contact (267) is moved a distance directly proportional to the variation in the thickness of the pulp mat on the cylinder mold. The resistance coil (270) is uniform throughout its length if the compensating water meter shown in Figure 13 is employed, but is of varying resistance per unit of length if the non-compensating meter shown in Figure 9 is used. The contact (271) is operated by the float (137) in each case. The voltage or potential indicated or recorded by the instrument (276) is obviously dependent on the position of the contacts (267) and (271) in reference to their associated resistance coils.

It is seen from the foregoing description that the potential difference between the terminal (278) and the contact (267) is proportional to the thickness of the pulp mat. The potential difference between the contact (271) and the terminal (277), on the other hand, depends not only on the length of the resistance included between the contact (271) and the terminal (277), but also on the potential difference between the terminal (278) and the contact (267). If the resistance between the terminal (277) and the contact (271) is directly proportional to the rate of flow of white water through the water meter, it is evident that the net potential difference between the terminals (273) and (274) is directly proportional to the resistance between (267) and terminal (278) multiplied by the resistance between (277) and contact (271). Since these two resistances are, as explained, directly proportional respectively to the thickness of the pulp mat and to the rate of flow of the white water, the potential difference or voltage drop across the terminals (273) and (274) is directly proportional to the product of the multiplication of the thickness of the pulp mat by the rate of flow of the white water, and hence is inversely proportional to the slowness.

Controlling the Refiner

In Figure 18 are illustrated the means used to control the operation of the jordan (20) so that it will automatically deliver stock of a given freeness or slowness. The condition of the stock is dependent on the relative adjustment of the plug and shell of the machine, and in the present instance this adjustment is automatically controlled, the power used for effecting the longitudinal adjustment being supplied by a comparatively small electric motor (281), from which power is transmitted to a shaft (413) having a pinion (414) by which a feed screw (1414) engaging a slidable bearing (1415) adjusts the rotor. A pinion (1416) on the feed screw, which is journaled on the stationary frame, through an idler gear (1417) drives a pinion (1418) on a feed screw (1419) threaded into a nut on the sliding frame of the motor (280) of the jordan. The relation of the parts is such that when the pinion (414) is rotated in one direction or the other the plug of the jordan, together with the motor (280) are simultaneously adjusted to the same extent in one direction or the other.

The electric mechanism by which the adjusting wheel (415) of the jordan is caused to rotate in one direction or the other to compensate for variations in the slowness of the stock in vat (25) from the desired standard slowness is directly controlled from the slowness indicator. At (282) is a control box containing a portion of the controlling mechanism. Inside this box is a potentiometer circuit including the uniform electrical resistance wire (283), the terminals of which are in a local circuit including a battery (284) and a variable manually adjustable resistance (285). In series with the contact arm (286) of the potentiometer circuit in the control box is the movable, high resistance coil (287) of a polarized relay. Concentric with the resistance wires (288) graduated so as to correspond with the scale of the dial plate of the indicating mechanism and with the charts of the recording potentiometer. The variable resistance (285) is adjusted so that the drop in potential across the terminals (289) and (290) of the control potentiometer circuit is equal to the drop in potential across the corresponding terminals of the resistances (255) and (255¹). The index arm (286) is manually set at that point on the scale corresponding to the desired slowness of the stock delivered from the refiner.



FIGS. 18, 19 AND 20

Fig. 18—Means Which May be Used in Controlling the Operation of the Refiner by Means of the Slowness Tester, so as to Maintain a Predetermined Slowness of the Refined Stock. Fig. 19—A Different Arrangement of Certain of the Circuits in the Recording Mechanism. Fig. 20—A Detail in the Apparatus Represented in Fig. 18.

If the slowness in the vat of the tester differs materially from the desired value, there will pass through the movable coil (287) an electric current which depends in magnitude and direction on the degree and sign of the difference between the actual and desired slowness. Coil (287) will consequently be propelled up or down towards one or the other of the two stationary coils (291), (292), which are arranged in a local circuit including a battery (293). Permanent magnets may be used instead of the electromagnets (291), (292). The movable coil (287) is supported at one end of a lever (294) fulcrumed on a pivot (295) and bearing at its other end a switch closer (296). In order that the lever may be accurately poised, it is provided with a counterweight (297) and also may be provided with a plunger (298) operating in a dashpot (299) to more or less damp the impulses imparted by the lever. The lever (294) of the relay controls the passage of current through the electromagnets (408), (409), which in turn control the adjustment of the jordan plug relative to the shell.

The pairs of contacts (309) and (310) are electrically connected respectively to the solenoids (408) and (409) and to a source of electric current (308) through the timing device (400). The contacts (309) and (310) are shown as leaf-springs, which tend to remain open unless closed by the switch closer (296). The comparatively small motor (281) which furnishes the power for adjusting the position of the jordan plug and motor, is connected directly to a source of current, and constantly rotates, thereby causing the worm gear (401) in mesh with worm (402) to turn. Eccentric on the worm gear shaft is the pin (403) which acts as a pivot for the yoked link (404) which reciprocates with every revolution of the worm gear shaft. Pivoted to the left arm of the yoke is the link (405), which, in turn, is similarly connected to link (406), pivotally suspended from the support (407). To the lower end of link (406) are pivoted the solenoid armatures (306), (307). Two leaf springs (410), (411) bring the link (406) into a vertical position when the solenoids (408), (409) are not in operation.

The yoke or link (404) bridges the double-faced ratchet wheel (412) securely mounted on shaft (413) and to which is also

keyed spur gear or pinion (414) in mesh with the gear (415) previously described. The fingers (416), (417) of the yoke reciprocate in a vertical plane at right angles to the faces of the ratchet wheel (412) and passing through the latter to one side of the center.

If the actual slowness is greater or less than the desired value, the polarized relay in control box (282) will cause either contacts (309) or (310) to close, thus energizing solenoid (408) or (409). The corresponding armature (306) or (307) will then be pulled towards the energized solenoid, causing, by means of the link (406) into a vertical position. The rotation of the ratchet the left until the finger (416) or (417) engages the teeth on the ratchet wheel. The latter will be rotated in one direction or the other as the yoke (404) reciprocates until upon the opening of the contacts (309) or (310), the spring (410) or (411) brings the link (406) into a vertical position. The rotation of the ratchet wheel (412) effects a corresponding rotation of the gear (414) which in turn operates the adjusting wheel (415) so as to push the plug of the engine towards the shell if the slowness is too low, or to pull the plug away if the slowness is too high.

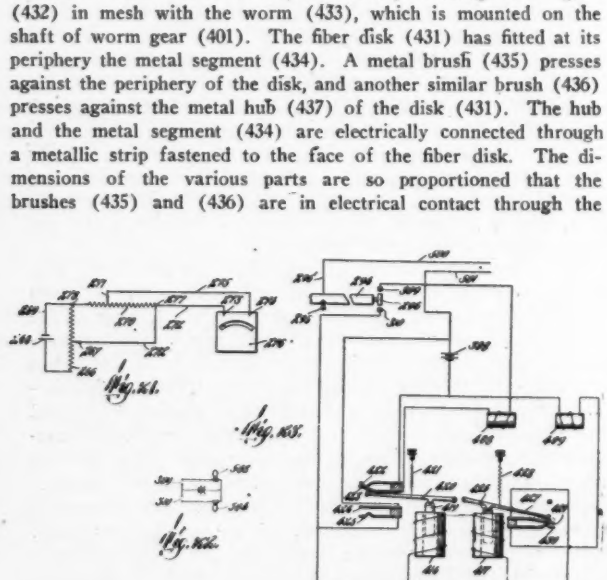
The transformer (418) and solenoids (416), (417) are provided to protect the jordan and prevent the plug from being drawn too tight against the shell or pulled too far out. They act by breaking the circuits which energize solenoids (408) or (409) (as the case may be) by which the adjusting mechanism is operated.

Stabilized Control

In order to stabilize the automatic control of the jordan, it is preferable to insert in the circuit including the solenoids (408), (409) a timing mechanism which permits the operation of the solenoids during only a few seconds consecutively in, say, every two or three minutes, so that sufficient time may elapse after each comparatively slight adjustment of the jordan motor and plug to permit the desired slowness changes to become manifest in the slowness testing machine. The form of timing mechanism shown at (400) in Figure 20 is electrically connected to the control system through leads (500), (501). It consists of a fiber disk (431) concentric with and driven by the slowly rotating worm gear (432) in mesh with the worm (433), which is mounted on the shaft of worm gear (401). The fiber disk (431) has fitted at its periphery the metal segment (434). A metal brush (435) presses against the periphery of the disk, and another similar brush (436) presses against the metal hub (437) of the disk (431). The hub and the metal segment (434) are electrically connected through a metallic strip fastened to the face of the fiber disk. The dimensions of the various parts are so proportioned that the brushes (435) and (436) are in electrical contact through the metal segment (434), metallic strip, and hub (437) but a predetermined portion of the time of each revolution of the fiber disk.

It should be noted that although the timer (400) disconnects the solenoids (408) and (409) from the adjustment control circuit during part of the time, the contacts (424) and (425) may cause the plug of the jordan to be pulled away from its shell at any time whenever the current in (418) exceeds a predetermined value.

Instead of the automatic control mechanism, a system of lights may be used to signal if the slowness of the pulp varies from the desired value. In this case the level (294) of the relay controls the passage of current through the lamps (503) and (504) (Figure 22), one of which may be colored, say red, and the other green. According as the slowness is too low or too high, one pair of contacts (309), (310) will be closed by the switch closer (296), causing either light (503) or (504) to shine.



FIGS. 21, 22 AND 23

Fig. 21—An Alternative Means of Indicating the Freeness of the Stock. Fig. 22—Another Means for Indicating the Adjustment to be Made in the Beater to Change the Slowness of the Stock. Fig. 23—A Larger Scale Representation of Certain of the Electrical Instruments Illustrated in Fig. 18, but Shows a Slightly Different Circuit.

TAPPI Fall Meeting Committees

Assuring the men of the paper industry that the meeting of TAPPI in Wausau on September 25, 26, and 27, 1928 will be one of the greatest ever held is the following local organization:

General Chairman, Allen Abrams.

Finance Committee—D. C. Everest, Chairman, N. S. Stone, J. P. Smith.

General Committee—Grover Keeth, Chairman, C. A. Cajaraus, M. M. Whitman, J. R. Salveson, Warren Winn, W. H. Graabner.

Entertainment Committee—E. M. Bassler, Chairman, G. C. Howard, N. H. Foley, R. H. Kelly.

Ladies Committee—Mrs. D. C. Everest, Chairman, Mrs. H. A. Skinner, Mrs. M. M. Whitman, Mrs. E. M. Bassler, Mrs. Grover Keeth, Mrs. G. C. Howard, Mrs. Allen Abrams, Mrs. R. H. Kelly, Mrs. Warren Winn.

Mill Visitation Committee—H. A. Skinner, Chairman, C. M. Green, G. H. Urbara.

It is doubtful if many communities has more to offer to technical men of the paper industry than "Wausau—the Heart of Wisconsin.

Reservations For TAPPI Fall Meeting

Wausau, the meeting place of TAPPI on September 25, 26 and 27, 1928 is well equipped to house the members of the Technical Association in the commodious and modern Hotel Wausau. This is one of the excellent Schroeder Hotels, others of which are located in important centers in Wisconsin and Minnesota. Reservations for room should be made by members directly with P. L. Goerling, Manager, Hotel Wausau, Wausau, Wisconsin. Inasmuch as the best rooms will go quickly, reservations should be made at once. Following are the rates which will apply to the 175 rooms that are available:

Rooms without bath (single)	$2.00 per day
" " " (double)	3.50 " "
Rooms with Bath (single)	3.00 and 4.00
" " " (double)	5.00 and 6.00
" " " (twin beds)	6.00 and 8.00

Joseph R. Johnston Dead

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., July 9, 1928.—Joseph R. Johnston, 73, for many years a department superintendent of Finch, Pruyn & Co., died at his home here after an attack of heart failure. He was stricken while eating dinner. Mr. Johnston had been connected with Finch, Pruyn & Co. for more than forty-five years and until he retired a few months ago following an injury was one of the oldest employees of the company.

During his long term of service with the local firm Mr. Johnston served as superintendent of the company's sawmill and during the construction of the news print mill was master mechanic. He also filled other important positions.

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Some Notes on Goodwill as an Item in the Value of a Business

By Sir Gilbert Garnsey, K.B.E., F.C.A.*

The term "goodwill" has never been successfully defined because it has come to be applied to a great variety of circumstances. Whatever characteristics, however, the goodwill of a company may possess, the value allocated to it by a purchaser will represent the excess of the value of the business as a whole over the value attributed to the tangible assets.

The amount which is paid for the Goodwill of a business is frequently described as so many years' purchase of the average profits of the business computed by references to the results of recent years.

This form of description is probably due to the fact that a valuation of Goodwill is often prepared on similar lines.

In such a case the profits adopted as the basis of the computation are usually the profits after deducting a commercial rate of interest upon the capital actually employed in the business, this balance of profits representing the "super profits" for which a purchaser is called upon to pay. By this method the actual amount to be paid for the Goodwill is then arrived at by taking so many years' purchase of the ascertained "super profits."

This method has the sanction of established usage, but it must be remembered that the valuation depends largely upon the number of years' purchase adopted and the rate of interest employed, while there is no rule by which either can be fixed.

It is possible that consideration of the question from another point of view may help to remove a certain amount of misunderstanding as regards the principles which should guide a purchaser of a business in estimating the value of the Goodwill.

Many Ingenious Definitions

There have been many ingenious attempts to define Goodwill, none of which has been completely successful for the reason that the term Goodwill has come to be applied to a very great variety of circumstances of which any one or more enable a particular business to earn "super profits"; it is hardly too much to say that the circumstances of no two businesses are identical and that almost every business possessing a valuable Goodwill could provide a definition different from any other company. Whatever special characteristics, however, the Goodwill of any company may possess, the value allocated to it by a purchaser will represent the excess of the value of the business as a whole over the value attributed to the tangible assets.

This fact will be more readily appreciated when it is realized that the value of the Goodwill of almost all commercial undertakings is closely interwoven with the value of the fixed assets and to some extent of the current assets, such as Stock, which are necessary for the conduct of the business and the earning of the profits, and which are dependent as to value in a very large measure upon the fact of the business being a going concern.

Unlike the current assets, such as Debtors, Stocks, Cash, etc., which are invariably stated in Balance Sheets or prospectuses, as the case may be, at amounts estimated to be not in excess of their realizable values, the values shown against the fixed assets, such as Buildings, Plant, Machinery, etc., are not necessarily related to realizable values at all. These items are usually shown at a valuation on the basis of the business as a going concern or at cost less appropriate depreciation, and may appear at figures below or in excess of the present realizable values.

The practice of setting out in balance sheets and prospectuses the values of the assets of a business, distinguishing between Goodwill and the Fixed and Current Assets under various headings, while serving a most useful and essential purpose, may be opened to some misconception. In particular, it is only in the rarest instances that the values put upon fixed assets and, it may be added, upon the stock-in-trade, could be realized apart from the Goodwill. Experience has shown that where a business has ceased to be carried on or has become unprofitable, such buildings as factories and the machinery contained therein may, through heavy expenses of upkeep, become almost liabilities rather than assets, and may realize but a fraction of the values put upon them upon the basis of a going concern, and the same may, to a modified extent, be said of the stock-in-trade.

A Few Exceptional Cases

The few exceptional cases referred to are those in which the buildings and other fixed assets, when separated from the business, can be readily turned to account in some other business; for example, a hotel, having through bad management become unprofitable, or having through its situation become unsuitable for the carrying-on of hotel business, might be turned into offices or residential flats. Such cases, however, form too

* Canadian Chartered Accountant.

small a proportion of the general body of commercial undertakings to impair in any serious degree the soundness of the principle that the value of the fixed and, to some extent, of the current assets, such as stock, of a commercial undertaking, is to a very large degree interwoven with the value of the Goodwill.

There appears to be an increasing tendency to regard the number of years' purchase as one of the most important factors in estimating the value of the Goodwill of any concern. While this may be true in a few special cases, particularly in regard to professions where personal skill and energy are vital elements in earning capacity, in the case of commercial concerns, generally speaking, it is not a primary factor or even a reliable standard of measurement in arriving at the value of Goodwill.

In all normal cases of the sale and purchase of a commercial concern the purchaser is largely guided by two factors—first, the degree of commercial risk incurred in carrying on that particular business, and, secondly, the return or yield which he desires to be shown by the profits which he expects to earn. These two factors are, of course, inter-dependent, and the greater the risk incurred the higher the return demanded.

It should be borne in mind that the vital factor is the yield on the capital to be invested, and when once this question is settled, it does not matter if in the price paid the Goodwill should work out at one, five, or ten years' purchase of the profits.

It follows, therefore, that the most satisfactory method of valuing a business is to take it as a whole. Having ascertained the value of the net tangible assets by the usual methods, and having formed an opinion of the degree of risk to be incurred by the capital invested, the purchaser is in a position to decide the minimum return or yield which he requires upon his investment.

The ascertainment of this yield is of vital importance to the purchaser; it is computed as a rule by reference to what are considered to be the "maintainable" profits after examining the results of a sufficient number of past years' trading, and taking into account future risks and possibilities—when the yield has been decided upon it provides the purchaser with the maximum price which he is prepared to pay for the whole business, that is to say Tangible Assets and Goodwill, if any.

When the purchase price has been settled, and only then, it is convenient and, indeed, necessary for bookkeeping purposes (including prospectuses and balance sheets) that the value so ascertained should be spread over the several classes of assets, the fixed assets being taken at cost less allowance for depreciation, or, in the alternative, at figures advised by professional valuers on the basis of a going concern, and the current assets, according to practice, that is stock at cost or market value, whichever is the lower, book debts at estimated realizable value, investments at market or estimated market values, and so on. From the tangible assets so valued the liabilities are deducted, and the balance, if any, of the valuation of the business as a whole then represents the amount allocated to the Goodwill. As already pointed out, however, the value of this asset must be regarded as interwoven with the value of the other assets comprising the capital of the business, and in examining the figures in a balance sheet or a prospectus this factor must always be borne in mind.

One or two examples in figures may serve as illustrations. Assume that the maintainable profits of a business are computed at £500,000 per annum, and the net tangible assets are valued at £1,000,000. Assume, also, that a purchaser would require a yield of 10 per cent. upon his capital if invested in that particular business, then the maximum price he is prepared to pay would be £5,000,000, and his capital would be represented thus:

Net tangible assets	£1,000,000
Balance allocated to goodwill	4,000,000
Total	£5,000,000

The Goodwill would be stated at £4,000,000, and following the description so frequently applied would be described as equal to about nine years' purchase of the maintainable profits after allowing for interest at, say 6 per cent, (the rate naturally varies with the circumstances of each case) on the capital actually represented by tangible assets in the business, whereas it does not follow by any means that such a separate measurement of the value of one item in the total capital involved, viz., the amount allocated to Goodwill, has any bearing whatever upon the reasonableness of the price paid for the business as a whole.

It must not be assumed that such a method of valuing a business attaches no importance to the existence of tangible assets; these are taken into account in assessing the risk incurred by the capital to be invested before determining the yield required upon that capital, and the purchaser also endeavors to ascertain that the tangible assets are adequate for maintaining the profits upon which his calculations of value have been based.

For example, assume a similar business to the above with maintainable profits of £500,000 and net tangible assets of say £4,500,000. It might be that, with the somewhat greater security afforded by the tangible assets, the purchaser would be content with a return of, say 8½ per cent, that is to say, his maximum price would be £5,900,000, and in this case the capital would be represented by—

Net tangible assets	£4,500,000
Balance allocated to Goodwill	1,400,000
Total	£5,900,000

The Goodwill is then stated at £1,400,000, and following the usual practice, would be described as equal to about six years' purchase of the profits after allowing for interest as above mentioned.

Looked at in another way, assume a company with a capital of 2,000,000 shares of £1 each, earning say, £500,000 per annum, and with the capital represented thus—

Net tangible assets	£1,000,000
Balance allocated to Goodwill	1,000,000
Total	£2,000,000

Goodwill appears in the balance sheet at £1,000,000 or about 2¼ years' purchase of the profits after allowing for interest as above. On the other hand, the shares might, with profits yielding 25 per cent (paying, say 20 per cent dividend), reasonably be worth, say, £2 10s. to £3 each, making the total capital worth £5/6,000,000. This means that the amount allocated to Goodwill by a purchaser of shares at such a price becomes £4/5,000,000 (not in the books, it is true, but a fact nevertheless), and it is then equal to about nine or ten years' purchase of the profits.

The measurement of the amount allocated to Goodwill in these businesses on the basis of the number of years' purchase affords no guide whatever as to the value of the business as a whole, which can only be properly assessed on the basis of the yield on the total capitol to be invested.

Another aspect of this question is illustrated by the following example:—Assume a company formed to acquire for £1,500,000 a business whose net tangible assets are valued at £1,000,000. The capital of the company may be fixed at 1,000,000 shares, of £1 each, and these shares may be issued to the public at, say, 30s. each. The premium of 10s. a share, amounting to £500,000, might be utilized in the books of the company to write off the amount allocated in the purchase price for Goodwill—viz., £500,000. In the balance sheet of the company, therefore, no Goodwill figure would appear, nevertheless the amount allocated to Goodwill by a subscriber for shares at 30s. each is £500,000.

If the general principles set out above are accepted it follows that the relation between the amount allocated to Goodwill and the amount of the maintainable profits has not necessarily any bearing whatever upon the value of the shares or capital of a business. The amount allocated to Goodwill is only one element in the total capital, and it is upon the total alone as compared with the maintainable profits—that is upon the yield on the total capital—that the value of the business can best be judged.

How The Foreman Can Reduce Costs

By E. H. Fish, Engr., F. C. Hadley Co.

The primary reason for going into business, manufacturing or otherwise, is profit. Once in a blue moon a man is found who has made his pile, and who continues in business out of habit or as an amusement. He can be omitted from this discussion as a freak. In order to make a profit the selling price must be higher than the total of all costs.

The roughest possible division of these costs is shown in the diagram of Fig. 1. Many corporations are not able to show the space for profits at all. Those that do show it always want to make it larger. What have their foremen to do with it? The easiest thing to say to a firm that desires greater profits, is to raise prices. It is likewise very easy to do. All it requires is a circular letter to customers. But—and there is usually a but—increasing prices is easy, but getting orders at the advanced prices sometimes costs more than the increase brings in.

There are conditions under which prices can be advanced and customers obtained. The least-advertised and highest-priced automobile lacks no customers. Everyone that has the price and a desire for that kind of a car goes and buys one. Selling, in comparison with most other cars, must be negligible expense. The most expensive shoes that I have ever seen made, sell and sell easily. Other factories, near enough to hear that shop's whistle, complain about lack of business; they say that people ride and do not wear out shoes, they complain that women want only shoddy shoes that they can discard in a few days for a more eccentric pair. Yet this other factory goes on through good times and bad, making and selling shoes at two to three times the average market price.

Who does it? Of course the management does it, but what is a foreman but a part of management? There are shops doing purely routine work where the foremen are mere supervisors seeing to it that employees keep machines running, but as compared with the whole number they are only less prevalent than the man in business for entertainment.

How the Foreman Helps Quality

In the shoe shop just referred to, where I am so fortunate to be well acquainted, the foremen have been sold the idea that the shop is to send out only perfectly good shoes. And in this shop it is no mere gesture for the management to say that. If a foreman gets a lot of vamps and he finds 1 per cent or 50 per cent that do not seem to him to be right, he throws them out without fear of reprimand or discharge. The foremen are selected for judgment more than for any one other quality. And men with good judgment are likely to have most of the other good qualities. Their judgment is not limited to materials, it applies to workmanship.

A man in a machine shop with the job of turning or grinding a thousand shafts to limits of a thousandth of an inch needs little judgment. The inspector's gage says yes or no. There is no halfway perfection. But a man who is making an engine for an automobile that is never to wear out is little concerned with limits. Bearings must fit individual boxes. It must not be necessary to use No. 2 oil on one bearing and No. 17 oil on the next one to have them run equally warm. Owners of the more popular makes of cars will appreciate that mass manufacture does not invariably mean uniformity of operation when the machines are assembled.

What Superior Foremanship Can Do

The first essential to raising prices above those established by the market are, then, superior material and superior workmanship. Both of these things can be obtained only through superior foremanship. This statement will be challenged. Some will say that all that is necessary is good inspection. And they will be correct; but good inspection is a function of superior foremanship. An inspection department as usually run is merely a place for throwing away work and material. Under some forms of management, inspection takes on the form of foremanship as in functional management where the inspector is a foreman with a definite function to perform.

Good inspection forestalls spoiled work by seeing that the men who are to do it know what is wanted and have the disposition to give it. A shop with the ordinary inspection department is at war from one year's end to another. The foreman feels obligated to defend his workmen, and the inspectors feel that in order to justify their position they must throw out a predetermined amount of the products. In one shop of my acquaintance, if the spoiled work is over 10 per cent the foreman gets H--l, if less, the inspectors get it. Needless to say, the spoiled work is pretty uniformly 10 per cent.

Selection of Material

Some will say that foremen are not allowed to select the material for their departments. This is true in some industries. A foreman whose job is making millions of milled screws does not pick out the bars of steel, because those bars are the product of another shop where every care has been taken by the other foremen to make the product uniform. Such shops do not comprise such a very large percentage of the whole of industry. Those who deal with the cutting of metals have difficulty in realizing how many industries there are that are reduced to no such science as their own.

Piano manufacturers are dependent for economy and selling ease, on the selection of wood for their cases. A $300 phonograph has about $15 worth of mechanism and $285 worth of an artistic casing. Even an underwear factory is dependent on foremen who can teach the girls to hold the two sides of a seam with the proper relative tension so the finished product will lay right. A factory, making millions of eyelets such as we use on our shoes, thought it could reduce its workings to rule, but it found that the human element made the whole difference between profit and loss, that it was more economical to let men do things the way they liked to than the "right" way.

Cannot we say, then, that the job of being a foreman is to produce goods of the quality determined by the management? For a foreman who persists in trying to raise the quality of the goods above the market demand is heading his firm for the bankruptcy court just as surely as the man who falls below the quality demanded.

Limited Demand for Luxury Products

For example, suppose that some wealthy man bought up the Rolls-Royce factory and enlarged it to a capacity of 2,000,000 cars a year. The answer is easy. There are not that many men who can buy Rolls-Royce cars even at cost. To reach that many men the price would have to be cut and recut until it was so far below actual cost that the richest capitalists could not stand it for a year. The best management is that which discovers a demand and selects that part of the demand which will give it the greatest profit over a period of time. A manufacturer of cheap jewelry designed, overnight, pins emblematic of Lindbergh's achievement. They had to be on the market at once. No time could be wasted on refinements. They were put out and, crude as they were, they sold at a profit. And the manufacturer showed his judgment by stopping their manufacture before they became a drug on the market.

But what about some of the items of cost which can be re-

duced? Our diagram shows a block for materials. We have considered the quality of materials in a way which implies that the foreman is going to make the book cost of materials high for the sake of high selling prices. He also has the job of saving materials by reducing waste. The shoe-cutter is most valuable who gets the most good pieces out of a hide. If left to himself, he thinks about last night's dance or tomorrow's ball game and falls a little short, but not enough for a reprimand, for hides are not all one size or shape. The leeway between possibility and probability has put many a shoe shop out of business.

The foreman's job in this case is so to select his important men and so imbue them with the company's ideals that they will consistently endeavor to get the greatest real value out of the materials which are given out by the stockroom. It was long ago the boast of the packing industry, that every part of the pig was sold except the squeal. The hides that go into one of the leading

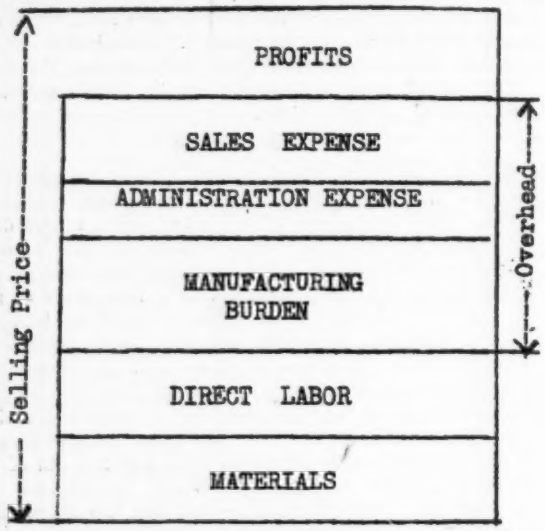

FIG. 1

Rough Division of Costs.

belt shops are so conserved that the smaller pieces are used for small cup leathers and then the cuttings and trimmings go ultimately into the manufacture of leatherboard.

Suggestions on Improvements in Manufacture

The next section of the chart shows the item which is most commonly considered a part of the foreman's job, and that is direct labor. So much has constantly been written on this subject and it has such diverse ramifications into the multitude of technical variations of the trades, that I will only generalize about it here.

Undoubtedly the greater number of improvements in methods of manufacture, which have resulted in saving direct labor, have come from foremen, but it is a lamentable fact that they have not come as freely and promptly as they might. In all my acquaintance there has been a notable lack of unity of purpose between engineering departments and production departments. Many engineers seem to think that for them to accept a foreman's suggestion without first distorting it out of semblance to its original shape is an admission of incapacity. Foremen who see their ideas garbled become reluctant about presenting more ideas.

My suggestion regarding the reduction of the cost of direct labor is that the management in many shops might profit greatly by encouraging foremen to make constructive suggestions, and to encourage them by getting their suggestions first hand rather than through their engineering department. Suggestion systems usually offer encouragement to workmen, but leave it understood that foremen are paid for giving their best efforts to improvement of methods. Plant after plant has found foremen growing more and more inclined to let well enough alone and to leave the making of suggestions to workmen. The management thinks the foremen have gone stale when as a matter of fact (which they will admit to a stranger), they have simply found themselves discouraged rather than encouraged.

How the Foreman Can Cut Overhead

The remaining section of the diagram with which foremen can concern themselves is that bug-a-boo of all industry, the overhead, or in this case the manufacturing burden. And first of all, it should be definitely made known to the foremen, that the percentage of overhead to direct labor is a very poor barometer from which to judge the efficiency of the plant.

For example, suppose that in a given department the direct labor for a month has previously averaged $10,000 and that the department's share in the overhead has been another $10,000. The ratio of overhead to direct labor is obviously 100 per cent. Now suppose, as happened in a shop with which I am acquainted, the foreman through various expedients, including influence on his men, reduced the direct labor to $5,000 and kept the production up. His share of the overhead remained the same, $10,000, so his ratio became 200 per cent, which in itself is enough to give many a general manager a fit. As a matter of fact, he was saving the company $5,000 a month and he was called down for increasing the overhead from 100 per cent to 200 per cent. The figures given are only a rough approximation, but the principle is illustrated quite as well as by the exact figures. The point is that a foreman may easily be discouraged from making valuable improvements in his methods by a cost department that works by rule-of-thumb rather than common sense and reason.

Rearranging Machinery

Within the items of the overhead there are many the total of which the foremen may influence, if they will. Rent, taxes, interest, etc., he cannot influence in fact, and yet another foreman of my acquaintance was able to save his firm half their rent and bring the shop all on one floor by rearranging machinery and selling an accumulation of junk that had held over through the regime of several previous foremen. For every shop that is crowded with useful machinery there are not less than five that could give up some space. Shops build additions which they would not need if they had half the confidence in their junk dealers that they have in their bootleggers.

Reducing Accident Cost

Liability insurance is not a large item but it is one that can only be reduced by the foremen, no matter how expensive a safety engineering department there is. Repeated cases are found where the stubbornness of a single foreman has prevented a safety device being used for fear of decreased production, and that has resulted in increased rate for the whole shop. And for that matter the man who can most usually tell the engineering department what kind of safety device will least interfere with production is the foreman of that department.

Saving Power and Using Heat

Power is very like the barrel of sugar that our fathers used to buy every fall. So long as there was any sugar in the barrel the whole family looked on it as an unlimited supply and helped themselves on every occasion. Many foremen look on power as something to be used rather than as something to be conserved. Shafts out of alignment, bearings too tight, overloaded machine, unoiled bearings, machines not shut down when not needed, unnecessary electric-lights—all these and many more contribute to an enlarged cost of power. We have just bid on a power plant where the decision is going to rest on

the third place of decimals as between our guaranty and the local power company's bid for current per kilowatt hour. I am sure, by observation of the plant, that their foremen could save them ten times what we can.

Heat comes from the same coal pile or oil tank as power and is even more easily dispersed without returns, but its use must be balanced against efficiency and comfort of workmen. It pays to use heat rather than to have men trying to work with their hands in their pockets.

Improving Shop Transportation

Shop transportation is another point where the foreman can make or lose the company money. When the shop is big enough to indulge in carrier systems, part of the responsibility is removed, but most shops never will have anything but man power for moving goods in process.

The way it is usually done recalls the story of the man who was hired to carry bricks, up a ladder. Very innocently he agreed to carry bricks up all day long, but at night his foreman discharged him because he only carried them up half the day, the rest of the time he was coming down for more. Just so, most errands in our shops are one-way errands. Department A sends a truck load of castings to Department Z, and the carrier meets a man from Department Z carrying partly finished stock to his own department. Both men return empty-handed. Of course, all that is necessary is a bit of co-operation between the foremen, but that is oftener noticed for its absence than otherwise.

Supplies seem to follow the same rule as power. If there appears to be an ample supply, everybody helps himself liberally. In a shop where the editor of "Manufacturing Industries" once worked for many years, one of the foremen made the assertion that there was several hundred dollars' worth of high-speed steel kicking around in drawers and under benches. When taken up on his statement, he went around with a couple of helpers and found over $3,000 worth, all of bars that had been drawn from stock, a piece or two cut off and the balance thrown under the bench for use if wanted.

The steel was not lost but the workmen had inadvertently shifted it from supplies to capital. It was available if wanted, but to find the right piece cost more than to go to the stockroom and get another piece. This is merly a rather extreme case of what is going on all the time everywhere. If it is not the foreman's job to see that it does not go on, whose job is it?

Lessening Actual Depreciation

Foremen will tell you, that they have nothing to do with depreciation; that certain machinery depreciates 5 per cent a year and other machinery falls off 10 per cent a year. That is what the accounting department takes from its books, but it has little connection with what actually happens in the shop. Unless the management has the foresight, when buying equipment, not to purchase machines that are on the verge of being discontinued, the foremen cannot control new developments, which may make it unprofitable to keep on using what has been bought, but he can at least stop abuse. Lack of oil in the right place, running against machines with loaded trucks, neglect to stop the feed until the machine has injured itself—all these things are a part of his job. Whether the bookkeeper ever hears of it or not, they alter the actual depreciation. Depreciated machinery does not mean loss of capital alone, but it means additional labor per unit of production, which can only be obviated by careful foremanship.

But it is in the expense for indirect labor, that a foreman's managerial ability shows most clearly. It is astonishing to see how cleverly a man, otherwise ignorant, can appear to be working, when all that he is doing is waiting to see if there is another job to be done. Indirect labor for the most part must wait on orders—that is, a laborer is not supposed to use initative and start new jobs. One of the most valuable foremen, that it has been my fortune to have work for me, made it a practice never to leave a laborer without at least one job ahead of him besides the one he was on. It was always, "Now John when you get this job done, go right over there and do so-and-so." Very few laborers are really lazy. They find it easier to work than to kill time, and yet they all want to keep their jobs. They cannot be blamed if they play the game to look busy.

There is always a serious question as to retaining laborers, when there is lack of work for them. The best way to solve the problem is to sidetrack it, by not having any more than laborers enough to do the average amount of work. A little overtime once in a while is cheaper and makes better feeling than to hire on a lot of men for a few days work and then keep them stalling around the place for days before one has the courage to drop them.

Very important to the foreman, and at first thought entirely out of his control, are the two items of sales expense and administration expense. It would be a case of stepping out of character for a foreman to criticize his concern for paying the president too large a salary, though plenty of that is going on behind the scenes in every shop. However, a very considerable part of the cost of both sales and administration is caused by poor foremanship.

It falls to the lot of the sales department to not merely sell goods but make them stay sold. There are, and always will be, occasional unreasonable customers but the great bulk of the complaints about defective goods are made by reasonable men, and many of them are based on actual and preventible errors. The sales department not only has the problem of adjustment of such claims, but it has an uphill and expensive job to make more sales in the same place. Only recently a firm lost a very desirable order because it was brought out by another firm which firm some two years ago delivered to this same customer some other goods, which were alleged to be defective. In this particular case a hundred dollars' worth of service would have prevented the first friction, and the probable profit on the order, which has just been lost, should have been well over the thousand mark.

And even in the administration department, much money is spent because of the evident need of keeping a constant check on the activities of the shop, which are under the control of the foremen. Therefore, good foremanship saves at every turn.

For many years of intimate contact with foremen, my own and others, it seems to me that it is safe to say that a large part of the poor foremanship, that is prevalent, is due to a lack of knowledge of what the management wants the foreman to do. Foremen for the most part look at themselves as expert workmen, who have been promoted because they are good workmen, while the management has made them foremen because they believe them to have managerial capacity. If this is so—and I am very sure of it—then the management in a great many shops should set out at once to let its foremen know enough about its ways of doing business, so that they can intelligently help reduce costs.

W. J. Lawrence Heads Paper Makers Chemical

KALAMAZOO, Mich., July 9, 1928.—W. J. Lawrence, of Kalamazoo, has been elected president of the Paper Makers Chemical Corporation, capital $8,000,000, and the largest concern in the world devoted to manufacture of chemicals used in the paper and allied industries.

This action was taken at Easton, Pa., where final steps in the giant merger were consummated.

"We now have 22 plants under one management," said President Lawrence, "and I am sure it will result in benefits to the trade and more efficient operation on our part."

Other officers named are: Vice presidents, C. H. Knight, Easton, Pa. and R. M. Snell, Holyoke, Mass.; secretary-treasurer C. K. Williams, Easton.

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 7, 1928

SUMMARY

Cigarette paper	1762 cs.
Wall paper	18 bls., 2 pkgs., 1 cs.
Paper hangings	27 bls., 7 cs.
Hanging paper	7 cs.
News print	765 rolls
Printing paper	48 rolls, 56 bls., 96 cs.
Wrapping paper	28 bls., 3 cs.
Packing paper	26 bls., 6 cs.
Stencil paper and ink	77 cs.
Shelf paper	5 cs.
Surface coated paper	22 cs.
Baryta coated paper	209 cs.
Metal coated paper	4 cs.
Decalcomania paper	44 cs.
Filter paper	20 bls., 73 cs.
Sulphate paper	541 rolls
Parchment paper	2 cs.
Drawing paper	36 cs.
Writing paper	19 cs.
Tissue paper	14 cs.
Colored paper	53 cs.
Vellum paper	2 cs.
Crepe paper	2 cs.
Copy paper	3 cs.
Straw board	819 rolls
Miscellaneous paper	132 cs.
Veneer paper	1 cs.
Gallic paper	1 cs.

CIGARETTE PAPER

De Manduit Paper Corp., Indep. Hall, St. Nazaire, 792 cs.

American Tobacco Co., Indep. Hall, Bordeaux, 950 cs.

The Surbrug Co., Liberty, Harve, 20 cs.

WALL PAPER

F. J. Emmerich, Adriatic, Liverpool, 4 bls.

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S. H. Pomerance & Co. Inc., Minnekahda, London, 1 cs.

W. H. S. Lloyd & Co., Minnekahda, London, 8 bls.

A. C. Dodman, Jr., Inc., Homeric, Southamton, 2 bls.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Adriatic, Liverpool, 5 bls.

A. C. Dodman, Jr., Inc., Laconia, Liverpool, 1 ble.

W. H. S. Lloyd & Co., Laconia, Liverpool, 8 bls.

W. H. S. Lloyd & Co., American Trader, London, 4 cs., 13 bls.

Whiting & Patterson Co., Inc., Homeric, Southampton, 3 cs.

HANGING PAPER

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Downing & Co., France, Harve, 4 cs.

NEWS PRINT

Hudson Trading Co., Titania, Sweden, 153 rolls.

F. Henjes Jr., New York, Hamburg, 65 rolls.

Guaranty Trust Co., Stavanger fjord, Oslo, 32 rolls.

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Judson Freight F'd'g Co., Ryndam, Rotterdam, 25 cs.

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B. D. Kaplan, Adriatic, Liverpool, 143 bls. rags.

Castle & Overton, Inc., Adriatic, Liverpool, 72 bls. bagging.

Castle & Overton, Inc., Siberian Prince, Scotland, 196 bls. thread waste.

E. Mayer, New York, Hamburg, 105 bls. rags.

Chase National Bank, New York, Hamburg, 98 bls. rags.

Castle & Overton, Inc., New York, Hamburg, 118 bls. rags.

B. D. Kaplan, New York, Hamburg, 19 bls. rags.

E. J. Keller Co., Inc., New York, ——, 71 bls. rags.

E. J. Keller Co., Inc., Ryndam, ——, 19 bls. rags.

Overton & Co., Ryndam, Rotterdam, 163 bls. bagging.

Goldman Sachs & Co., Ryndam, Rotterdam, 129 bls. rags.

Chemical National Bank, Ryndam, Rotterdam, 105 bls. rags.

1st National Bank of Boston, Ryndam, Rotterdam, 111 bls. rags.

Castle & Overton, Ryndam, Rotterdam, 70 bls. bagging.

Phila. Girard National Bank, Brazil Maru, Hamburg, 165 bls. rags.

Whaling Waste Products Corp., Brazil Maru, Hamburg, 113 bls. jute waste.

American Exchange Irving Trust Co., Karlsruhe, Bremen, 64 bls. jute waste.

A. W. Fenton, Inc., Karlsruhe, Bremen, 51 bls. rags.

1st National Bank of Boston, Karlsruhe, Bremen, 106 bls. rags.

S. Raphael, France, Havre, 16 bls. rags.

Green Hamilton & Co., Bellepline, Rotterdam, 161 bls. cotton waste.

R. F. Downing & Co., Guido, Manchester, 50 bls. rags.

Manufacturers Trust Co., Guido, Manchester, 28 bls. rags.

Castle & Overton, Inc., Guido, Manchester, 70 bls. rags.

E. J. Keller Co., Inc., Guido, ——, 145 bls. bagging.

E. J. Keller Co., Inc., Coeur D'Alene, ——, 146 bls. rags.

Castle & Overton, Inc., Coeur D'Alene, Piraeus, 90 bls. bagging.

Kidder Peabody Accept. Corp., Republic, Bremen, 81 bls. bagging.

Bank of Commerce & Trust Co., Pr. Roosevelt, Bremen, 30 bls. rags.

Union Waste Co., Inc., Pr. Roosevelt, Bremen, 84 bls. rags.

Salomon Bros. & Co., Liberty, Havre, 104 bls. rags.

V. Galaup, Liberty, Havre, 301 bls. rags.

Castle & Overton, Inc., Liberty, Havre, 106 bls. bagging.

V. Galaup, Liberty, Dunkirk, 141 bls. rags.

National City Bank, Cabo Santa Maria, Bilbao, 170 bls. rags.

New York Trust Co., Cabo Santa Maria, Bilbao, 116 bls. rags.

Banco Com'l Italiane Trust Co., San Francisco Maru, Genoa, 31 bls. bagging.

S. Birkenstein & Sons, San Francisco Maru, Oran, 191 bls. bagging.

E. J. Keller Co., Inc., San Francisco Maru, ——, 258 bls. rags.

Bank of The Manhattan Co., Hellen, Barcelona, 74 bls. rags.

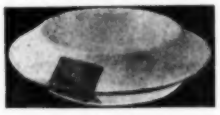
Union Bank & Trust Co., Hellen, Barcelona, 120 bls. cotton waste.

(*Continued on page 70*)

A pie plate that revolutionized an industry

One big pie manufacturer recently rebuilt his trucks in order to deliver his pies on Paprus Plates rather than tins. Everywhere bakers are realizing the advantages of Paprus Pie Plates. Moulded from pulp—not pressed from paper. Paprus Pie Plates are the only absorbent pie plates that absorb and retain their shape. Get your share of the business in Paprus Pie Plates. Write for Price list.

Paprus Pie Plates used as covered container



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PIE PLATES

KEYES FIBRE COMPANY, INC.
General Sales Offices: GRAYBAR BLDG., NEW YORK
Factory: Waterville, Maine. JOHN M. HART COMPANY, INC., *Manager of Sales*

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Ferguson customers include:

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A. P. W. Paper Co.
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Chillicothe Paper Co.
Warren Mfg. Co.
Spencer-Wynne Paper Products Company
Bennington Wax Paper Company
Oswego Falls Corp.
Fairfield Paper Co.

THE H. K. FERGUSON COMPANY
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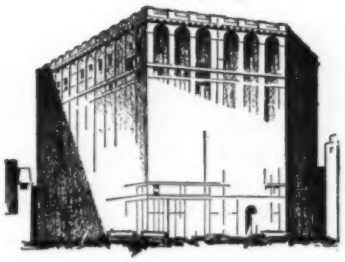
Ferguson
ENGINEERS



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The very location of The Fifth Avenue Building puts you within immediate touch of all up-town and down-town New York. You can complete many of your seasonal needs in one building and on one buying trip. You are ten minutes by subway from the Pennsylvania Station and only thirteen minutes from the Grand Central Terminal. Two elevated lines are nearby and buses and surface lines pass the door.

THE FIFTH AVENUE BUILDING

Broadway and Fifth Avenue, at Madison Square, NEW YORK

"More than an office building"

Imports of Paper and Paper Stock

(*Continued from page 68*)

Bank of The Manhattan Co., Hellen, Malaga, 43 bls. rags.

OLD ROPE

Anglo South American Trust Co., Adriatic, Liverpool, 117 coils.
Brown Bros. & Co., New York, Hamburg, 35 coils.
Brown Bros. & Co., Stavangerfjord, Oslo, 32 coils.
Brown Bros. & Co., Ryndam, Rotterdam, 333 coils.
V. Galaup, Liberty, Havre, 81 coils.
S. Birkenstein & Sons, San Francisco Maru, Oran, 107 coils.

CASEIN

Kalbfleisch Corp., Waukegan, Havre, 6 bags.
Kalbfleisch Corp., Liberty, Havre, 200 bags, 15,000 kilos.
Kalbfleisch Corp., American Legion, B. Aires, 572 bags.
National City Bank, American Legion, B. Aires, 1,118 bags.

WOOD PULP

E. M. Sergeant & Co., Gripsholm, Gothenburg, 449 bls. dry soda pulp.
Johanson Wales & Sparre, Inc., Gripsholm, Gothenburg, 299 bls. dry soda pulp.
Equitable Trust Co., Titania, Sweden, 5,000 bls. sulphite pulp.
Pagel Horton & Co., Inc., Titania, Sweden, 2,500 bls. sulphite pulp.
National City Bank, Titania, Sweden, 255 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Titania, Sweden, 2,805 bls. wood pulp; 2,500 bls. sulphate pulp; 875 bls. sulphite pulp.
Johanson Wales & Sparre, Inc., Titania, Sweden, 275 bls. sulphite pulp.
Castle & Overton, Inc., Titania, Sweden, 150 bls. wood pulp.
M. Gottesman & Co., Inc., Titania, Sweden, 1,975 bls. sulphite pulp.
Bulkley Dunton & Co., Titania, ——, 1,375 bls. wood pulp.
J. Andersen & Co., Milos, Hernosand, 1,800 bls. sulphate pulp, 360 tons; 300 bls. sulphite pulp, 50 tons.
Pagel Horton & Co., Milos, Hernosand, 1,500 bls. sulphite pulp, 250 tons.
Castle & Overton, Inc., New York, Hamburg, 4,171 bls. wood pulp.
Atterbury Bros., Inc., Fred. VIII, Oslo, 500 bls. wood pulp.
E. J. Keller Co., Inc., Stavangerfjord, ——, 400 bls. wood pulp.
International Accep. Bank, Stavangerfjord, Oslo, 800 bls. sulphate pulp.
Atterbury Bros., Inc., Stavangerfjord, Oslo, 500 bls. wood pulp.
Chemical National Bank, Stavangerfjord, Oslo, 810 bls. sulphite pulp.
Castle & Overton, Inc., Ryndam, Rotterdam, 1,858 bls. wood pulp.
E. J. Keller Co., Inc., Brazil Maru, ——, 340 bls. wood pulp.
M. Gottesman & Co., Inc., Bellepline, Rotterdam, 450 bls. wood pulp, 45 tons.
Thavenot S. S. Co., Fredensborg, Sheet Harbor, 1,861 tons wood pulp.

WOOD PULP BOARDS

International F'd'g Co., New York, Hamburg, 19 bls.

WOOD FLOUR

The Burnet Co., Gripsholm, Gothenburg, 363 bags.

WOOD DUST

The Burnet Co., Gripsholm, Gothenburg, 500 bags.

PHILADELPHIA IMPORTS.

WEEK ENDING JULY 7, 1928

E. H. Baily & Co., Waukegan, Havre, 3 cs. drawing paper.
Stephano Bros., Waukegan, Havre, 26 cs. cigarette paper.
Strawbridge & Clothier, Waukegan, Havre, 1 cs. writing paper.
Salomon Bros. & Co., Waukegan, Havre, 489 bls. rags.
E. A. Stone, Waukegan, Havre, 51 bls. rags.
V. Galaup, Waukegan, Havre, 55 bls. rags.
G. W. Millar & Co., Waukegan, Havre, 20 bls. rags.
A. Hurst & Co., Waukegan, Havre, 31 bls. rags.
American Rag Trading Co., Waukegan, Havre, 62 bls. rags.
Castle & Overton, Inc., Waukegan, Havre, 284 bls. rags.
G. W. Millar & Co., Waukegan, Dunkirk, 55 bls. rags.
J. M. Hagy Waste Works, Waukegan, Dunkirk, 78 bls. rags.
Salomon Bros. & Co., Waukegan, Dunkirk, 108 bls. rags.
V. Galaup, Waukegan, Dunkirk, 86 bls. rags.
E. J. Keller Co., Inc., Waukegan, ——, 838 bls. rags.
Salomon Bros. & Co., Indep. Hall, St. Nazaire, 203 bls. rags.
Castle & Overton, Inc., Indep. Hall., St. Nazaire, 367 bls. rags.
E. A. Stone, Indep. Hall, St. Nazaire, 264 bls. rags.
G. W. Millar & Co., Indep. Hall, Bordeaux, 83 bls. rags.
National City Bank, Indep. Hall, Bordeaux, 75 bls. rags.
Fidelity Trust Co., Indep. Hall, Bordeaux, 387 bls. rags.
E. J. Keller Co., Inc., Indep. Hall, ——, 263 bls. rags.
Bank of The Manhattan Co., Cabo Santa Maria, Bilbao, 84 bls. rags.
Union Bank & Trust Co., Cabo Santa Maria, Santander, 163 bls. rags.
E. J. Keller Co., Inc., Lowther Castle, ——, 70 bls. rags.
E. J. Keller Co., Inc., Blue Triangle, ——, 188 bls. rags.
E. J. Keller Co., Inc., City of Flint, ——, 74 bls. rags.
E. J. Keller Co., Inc., London Exchange, ——, 83 bls. rags.
Castle & Overton, Inc., Turpin, Germany, 97 bls. rags.
Castle & Overton, Inc., Westfalen, Germany, 537 bls. rags.
Castle & Overton, Inc., Coahoma County, Belgium, 314 bls. rags.
Castle & Overton, Inc., City of Flint, Ireland, 37 bls. rags; 166 bls. jute waste.
Castle & Overton, Inc., Carnia, Italy, 123 bls. rags.
Castle & Overton, Inc.,, Nitonian, Ireland, 232 bls. rags.
Castle & Overton, Inc., London Exchange, England, 69 bls. rags.

BALTIMORE IMPORTS.

WEEK ENDING JULY 7, 1928

V. Galaup, Indep. Hall, St. Nazaire, 228 bls. rags.
R. J. Reynolds Tobacco Co., Indep. Hall, St. Nazaire, 910 cs. cigarette paper.
V. Galaup, Indep. Hall, Bordeaux, 130 bls. rags.
Moore & Munger, Indep. Hall, Bordeaux, 1,050 bls. rags.
Congoleum Nairn Co., Liberty, Havre, 446 bls. rags; 292 bls. bagging.
Congoleum Nairn Co., Liberty, Dunkirk, 541 bls. rags.
E. J. Keller Co., Inc., Binnendyk, ——, 898 bls. rags.

NORFOLK IMPORTS.

WEEK ENDING JULY 7, 1928

Castle & Overton, Inc., Turpin, Germany, 34 bls. rags.

PORTLAND IMPORTS

WEEK ENDING JULY 7, 1928

J. Andersen & Co., Milos, Pitea, 9,000 bls. sulphite pulp, 1,500 tons.
J. Andersen & Co., Milos, Hernosand, 9,000 bls. sulphite pulp, 1,800 tons.

BOSTON IMPORTS

WEEK ENDING JULY 7, 1928

G. F. Malcolm & Co., Laconia, Liverpool, 4 cs. tissue paper.
Castle & Overton, Inc., Maryland, England, 81 bls. waste paper.
E. J. Keller Co., Inc., Nitonian, ——, 69 bls. bagging.

Show Movies of Forest Preservation

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., July 9, 1928.—Three reels of moving pictures dealing with reforestation and other subjects relating to forest preservation are being exhibited in Northern New York communities by the St. Regis Paper Company and the Northern New York Utilities, Inc. The pictures, taken by the United States Department of Agriculture, have been loaned to the Northern New York firms. The three reels are entitled, "The Forest for Wealth," "The Forest for Health" and "The Forest and Water."

In connection with the showing of the picture John E. Kieb, forester for the Utilities and the St. Regis Paper Company, explained the significance of the various scenes.

At the first showing of the pictures Mr. Kieb spoke briefly of the need for reforestation in this and other states and told of the work of the St. Regis Company and the Utilities Company in planting trees in the Adirondack sections. He gave an interesting description of the tree nursery maintained by the St. Regis Paper Company at St. Regis Falls annually turning out millions of young trees for transplanting by the Carlisle companies which to date have planted fifteen million trees on the Adirondack preserves of the St. Regis and other Carlisle companies.

The pictures point out that upon reforestation depends the maintenance of many of our industries and quotes statistics to show there are four million acres of idle land in New York State, much of this suitable only for the work of reforestation. The pictures show the use of wood in its many forms including its manufacture into newspapers, boxes, baskets and hundreds of other articles.

Mr. Kieb pointed out that at one time timber was the greatest natural asset of New York State insofar as raw material was concerned. Ruthless, careless and improper methods used by the early lumber men have laid waste great tracts and many of these are being reclaimed by proper tree planting. Of the industrial concerns engaged in reforestation the St. Regis Paper Company and the Northern New York Utilities are among the leaders in the state.

The next time
let BUTTERWORTH refill your rolls.

In refilling your rolls, no matter who made them, we use the same long staple cotton that we use in new Butterworth Rolls.

And in super and glassine rolls we use only the best paper obtainable.

This is why Butterworth rolls give hundreds of hours of extra service—1500 hours and more on glassine for instance.

A folder is available on Butterworth Calender Rolls.

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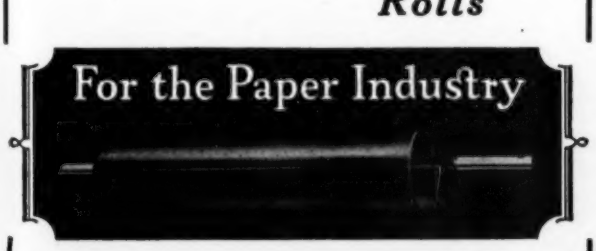
Butterworth Calender Rolls



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Soda Ash

Caustic Soda

Liquid Chlorine

Contract or Spot Delivery

In tank cars and multiple unit cars.

Write for Prices

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 Rector Street New York

Boston Syracuse Chicago Indianapolis Cleveland Cincinnati Pittsburgh Detroit Philadelphia Kansas City St. Louis Atlanta

Paper Mill Stocks and Bonds

Quoted by Messrs. McGay & Co., 25 Broad street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Fibre Company 6s, 1947	104	105
Abitibi Power & Paper 6s, 1940	104½	106½
Abitibi Power & Paper 6s, serially to 1934	100	102
A. P. W. Pulp & Power 7s, 1945	101½	103½
American Writing Paper 6s, 1947	85	87
Bastrop Pulp & Paper 6½s, 1940	103½	105½
Beaver Board 8s, 1933	102	103
Beaver Products Corp. 7½s, 1942	109	111
Bedford Pulp & Paper 6½s, 1942	98	100
Belgo-Canadian Paper 6s, 1943	103	105
British-Columbia Pulp & Paper 6s, 1950	90	92
Brompton Paper Serial A 6s, 1946	101	103
Brompton Pulp & Paper 6s, 1935	100	...
Brown Paper Mills Serial 6s, 1941	99	101
Brown Company 5½s, 1946	99	101
Bryant Paper 6s, 1942	100	101½
Canadian Paper Board 7s, 1937	97½	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	97	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago Debenture 6s, 1936	97	100
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	85	90
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	100	...
Champion Paper Corp. 6s, 1945	95	98
Chicago Mill & Lumber Serial 5½s, 1936	98	100
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	92	95
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	102	103½
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	60	...
Donnaconna Paper 5½s, 1948	95	98
Eastern Manufacturing Co. 7s, 1938	98	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Orange Paper 7s, 1942	103	...
Fort William Paper 6s, 1946	101	104
Fox River Paper 7s, 1931	100	...
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	101	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	95	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
International Paper 6s, 1955	103	105
International Paper 5s, 1947	99	101
Itasca Paper & Prairie River Paper Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Paper Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	88	92
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Pulp & Paper 6s, 1941	105	108
Manitoba Paper 6½s, 1936	102½	104½
Marathon Paper Mills Serial 5½s, 1942	99½	101
Marathon Paper Mills Serial 6s, 1937	100	...
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	98	101
Menosha Printing & Carton 6½s, 1939	99½	...
Midwest Box Company 6½s, 1940	100	...
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper 6½s, 1947	102	105
Munissing Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1942	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswegatchie Paper Serial 6s, 1932	95	100
Oswego Falls Corp. 6s, 1941	99	102
Oxford Paper 6s, 1947	102½	...
Paepcke Paper Mills 7s, 1930	99	...
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101½	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 6½s, 1943	105	107
Port Alfred Pulp & Paper 5½s, 1947	98½	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Provincial Paper 6s, 1940	100	...
Queen City Paper 7s, 1933	98½	...
Richardson & Company 6s, 1938	100	...
River Raisin Paper 6s, 1936	99	101
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Anne Paper 6½s, 1946	102	104
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Lawrence Paper Mills 6s, 1946	103	...
St. Lawrence Paper Mills 6½s, 1936	100½	102½
St. Maurice Valley Corp. 6s, 1945	102	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	101
Smith (Howard) Paper Mills 6s, 1934	101	...
Smith (Howard) Paper Mills 7s, 1941	104	106
Southern Paper Company 6½s, 1937	100	...
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1935	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
U. S. Envelopes 5s, Series 1934	99	...
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	101½	103½
Waterway Paper Products 6s, 1931	100½	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parsons Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P., Pfd.	65	75
Brompton Pulp & Paper, 8% Pfd.	100	102
Brown Corpn., 7% Pfd.	104	None Off.
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Cum. Pfd.	92	97
Eastern Mfg. Co., 1st Pfd.	60	63
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	98	100
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	150	None Off.
Marathon Paper Mills, Com.	125	...
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com.	115	135
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	70	80
Richardson Co., Com.	160	180
Rubberoid	101	103
Sabin Robbins Paper Co., 7% Pfd.	105	110
St. Croix Paper	155	170
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper Company	55	60
West Virginia Pulp & Paper, Pfd.	100	103
Whittaker Paper, 7% Cum. Pfd.	105	None Off.

Dayton Puts on Safety Program

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, July 10, 1928—J. N. Garwood, president of the Dayton Foremen's club, has appointed a committee of five members of the organization to co-operate with the Safety Council in putting on a safety program, which will include the following activities:—

Safety supervisor's meetings.

Meetings for superintendents and foremen.

First-aid course for foremen and workers.

Mass meeting for workers and their families.

Providing speakers for plant meetings.

Rendering assistance in the formation of plant committees and making plant inspections.

Bulletin and personal service.

Industrial executives are urged to make use of the Safety Council in solving their safety problems.

As no industries are more greatly interested in safety devices and measures, the paper mill division of the Foremen's club will be active in the proposed program.

New Machine Room Ready in September

ALBANY, N. Y., July 9, 1928.—Output of the A. P. W. Paper Company's tissue mill will be increased substantially with occupation of the new machine room unit now being built by the H. K. Ferguson Company of Cleveland, which is expected to be completed early in September.

Erection of the structural frame of the building, which will contain more than 60,000 square feet, has been completed. The floor of the machine room is to be of reinforced concrete and the roof will be of timber construction with cork insulation to prevent condensation.

The weight of the entire structure will be supported by concrete piles, 400 of which were driven to an average depth of 30 feet. Permanent alignment of the big high-speed paper machine which will occupy this building thus will be assured.

The covered craneway for the pulp storage yard, which the Ferguson company built last winter, also is being extended 150 feet.

BROWN COMPANY'S

ALPHA

is the demonstrated result of this Company's forty years of research in pulp making.

¶ It now ranks among the preferred materials for the making of higher grade papers.

¶ It yields the papermaker a profit and gives his patrons more than their money's worth.

BROWN COMPANY

founded 1852

PORTLAND MAINE

NEW YORK CHICAGO ST. LOUIS MINNEAPOLIS
BOSTON PITTSBURGH ATLANTA SAN FRANCISCO

Photograph of a Centrifugal Pump Shaft badly worn by working against flax packing which did not carry sufficient lubricant to prevent friction.

Avoid scoring the pump shaft by using a packing that has sufficient lubricant to prevent friction.

STYLE C PACKING

For pumps handling caustic soda and similar chemicals.
Its lubricant can be relied upon to resist the cutting action of these chemicals, and to keep the pump shaft so perfectly lubricated as to avoid friction.
To prove our claims let us send you a free working sample to test under your own conditions.
Specify Style C and state size desired.

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Water Tube Boilers Steam Superheaters
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CINCINNATI	Traction Building
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PITTSBURGH	Farmers Deposit Bank Building
PORTLAND, ORE.	Failing Building
SALT LAKE CITY	Kearns Building
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SAN JUAN, P. R.	Recinto Sur 51

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New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, July 11, 1928.

Although trading in the local paper market was rather quiet during the past week, mainly due to seasonal causes, a cheerful sentiment prevails throughout the industry, and general expansion is confidently anticipated in the autumn. Inquiries for future business are coming along in satisfactory volume and sales forces of the leading paper houses are planning a strenuous fall campaign. Prices are generally holding to schedule and there is little talk of concessions around.

Conditions in the news print market are practically unchanged. North American production is being maintained at about 80 per cent capacity. Consumption is about normal for the time of the year. Offerings are ample enough to cope with current requirements. Prices are rather weak at present and concessions are being made on most contracts signed for the forthcoming year.

Demand for paper board is well up to average for the season. Prices are generally steady and unchanged. The fine paper market is in a fairly satisfactory position, with prices practically unaltered. Tissues are moderately active. Most of the business transacted in the corse paper market was seasonal. Wrapping paper continues to move into consumption at a normal pace.

Mechanical Pulp

While contract shipments of ground wood are going forward in fair volume, hte demand for both imported and domestic mechanical pulp is very light at present. Supplies on hand are sufficient to take care of current requirements. Under the circumstances, prices are holding up to previous levels in a satisfactory manner, and shading is infrequent.

Chemical Pulp

The undertone of the chemical pulp market is strong and demand for the various grades is quite good for the season. Imported and domestic bleached sulphite are in an exceptionally sound position, producing mills being well sold ahead. While open water cargoes of Swedish pulp are beginning to arrive, the bulk of the shipments are needed to fill contract requirements and offerings are limited.

Old Rope and Bagging

Both foreign and domestic old rope are in excellent request from the paper mills. Accumulations are not excessive and prices generally rule steady and unchanged. The bagging market has been rather quiet of late. Demand for roofing bagging is only light adn the request for scrap bagging is below normal. The various grades of burlap are moderately active.

Rags

The position of the domestic rag market is practically unchanged Cotton cuttings are moving in fair volume for the season. Mixed rags are fairly active. No radical price changes have been recorded of late. Some improvement was noticed in the foreign rag market. Imported roofing rags are in persistent request. Prices on dark cottons and old shopperies are slightly firmer.

Waste Paper

Business in the paper stock market is suffering from the effects of the vacation period and the slowing down of production in the paper mills. Book stock is easier while quotations on old kraft white news and strictly folded news are somewhat weaker but No. 1 mixed paper is holding up to schedule in good style.

Twine

Trading in the local twine market during the past week continued along routine lines. Supplies are going forward into consumption in a normal manner for the season. There were a fair number of inquiries for future business around. Prices rule steady and unchanged from the basis which has prevailed recently.

Rapid Progress on A. P. W. Mill

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., July 9, 1928.—Construction work on the new additions to the plant of the A. P. W. Paper Company in North Broadway is well under way with a large force of men at work. The progress made to date is entirely satisfactory and the contractors in charge are said to have given assurance that the new building will be completed well within the contract date. The work is now being concentrated on the new paper mill unit for which foundations have been completed and side walls started. This structure is to be of brick and steel. Another smaller building which will connect the new mill unit and the original mill will also be constructed.

The paper mill addition, which is to house a new paper machine now building, will be ready by fall, according to present progress, and it is expected that the first shipments of machinery will begin arriving in September. It is hoped by company officials to have the new paper machine in production by the first of the year or shortly after.

It is understood that sufficient pulp stocks will be in storage before the close of navigation on the Hudson River to care for the operation of the new manufacturing unit through the winter months.

The company is receiving regular shipments of pulp from Sheet Harbor, Nova Scotia, by way of the Atlantic and Hudson River which are being unloaded at the company's new warehouse on the river front. Part of these stocks are being used in the company's North Albany mill and the remainder distributed to other paper mills in this section.

A recent shipment arriving in the Norwegian Steamship Nord brought a cargo of 1,500 tons. This is the largest pulp cargo that has come by water in a single vessel in the three years the A. P. W. Co. has been importing by ocean steamship. The boat was unloaded under the direction of Donald G. Kibbey, traffic manager of the company, and because of the fact the boat was equipped with double hatches and winch equipment the unloading was completed in record time.

A Correction

In the article entitled "Modern Engineering Answers the Call for Lower Costs in News Plants" which appeared in the June 28 issue of the Paper Trade Journal, Page 47 a statement was made as follows "these stones are built up of interlocking carborundum slabs." This should read "these stones are built of interlocking slabs of abrasive stone."

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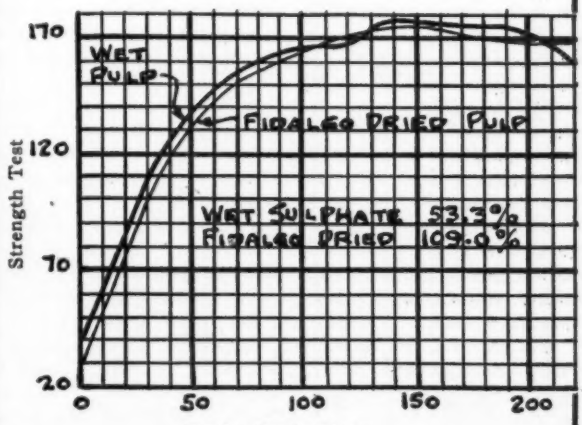
FIDALGO DRYING SYSTEMS

Wet Pulp Results With Dry Pulp



Curve Illustrating comparison between Wet and FIDALGO Dried in Beating and Strength Tests.

Note how closely the curve on FIDALGO Dried Pulp follows the Wet pulp curve.

High steam economy. Shredded Pulp shipped in Bales.

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TELEPHONE WHITEHALL 5243 CABLE "HERENCO"

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, July 11, 1928.

BLANC FIXE.—No radical changes were recorded in the blanc fixe market during the past week. Both the pulp and the powder were in light request. The pulp is still selling at $40 per ton, in bulk, and the powder is offered at from 3½ cents from 3⅝ cents a pound, in barrels, at works.

BLEACHING POWDER.—Most of the business transacted in the bleaching powder market was routine. Contract withdrawals continue to move in fair volume. Prices remain unaltered, in most instances. Bleaching powder is still quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Steadiness prevails in the casein market. While offerings are rather limited at present, no further price changes have been reported. Domestic casein is quoted at from 16 cents to 17 cents a pound. Imported casein is selling at from 16½ cents to 17 cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Supplies of caustic soda are moving into consumption in excellent volume. Prices are holding to schedule. Solid caustic soda is still selling at from $2.90 to $2.95 per 100 pounds. The flake and the ground are quoted at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Trading in the china clay market is moderately active. Prices are holding to schedule without difficulty. Imported china clay is offered at from $15 to $25 a ton, in bulk, ship side. Domestic paper making clay is selling at from $8 to $9 to ton, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—Demand for chlorine is persistent. Contract shipments are moving at a good pace. Prices remain unchanged. Chlorine is quoted at 3½ cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¾ cents to 4 cents a pound.

ROSIN.—The rosin market fluctuated during the week. Prices advanced slightly. At the naval stores, the grades of gum rosin used in the paper mills are quoted at from $10.02 to $10.10 per 280 pounds, ex dock, in barrels. Wood rosin is selling at from $7.50 to $8.30 per 280 pounds, southern shipping points.

SALT CAKE.—Offerings of salt cake are about sufficient to meet the current demand. Contract shipments are moving in good volume. Prices are steady and unchanged. Salt cake is quoted at from $15 to $17 a ton, in bulk, at works. Chrome salt cake is selling at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Contract withdrawals of soda ash are well up to average. Demand for this product is well maintained and prices are holding up to former levels without difficulty. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—The starch market is exhibiting a sound undertone. Shipments against contract are moving into consumption in excellent volume. The recently advanced prices are being maintained. Special paper making starch is selling at $4.22 per 100 pounds, in bags, and at $4.39 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Conditions in the sulphate of alumina market were rather quiet during the week. Prices are holding up to schedule and shading is infrequent. Commercial grades are quoted at from $1.40 to $1.55 per 100 pounds, in bags, at works. The iron free is selling at from $1.90 to $2.05.

SULPHUR.—Business in the sulphur market is brisk at present. Supplies are moving into consumption at an excellent pace. Prices are holding to schedule. Sulphur is still offered at from $18 to $19 a ton, in bulk, at mine, on contract orders. The spot quotation is $20 per ton.

TALC.—The talc market is practically unchanged. Demand is mostly routine. Shipments are well up to average. Prices are holding to previous levels. Domestic talc is quoted at from $16 to $18 a ton, in bulk, at eastern mines. Imported talc is selling at from $18 to $20 a ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.00	@ 4.25
Southern	3.75	@ 4.00
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	47.50	@50.00
Straw	52.50	@55.00
Chip	45.00	@47.50
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip	52.50	@55.00
Wood Pulp	80.00	@85.00
Container	67.50	@72.50
85 test Jute Liner	57.50	@60.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	30.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.25
Easy Bleaching	2.70	@ 2.90
No. 1 strong unbleached	2.60	@ 2.70
Mitscherlich unbleached	2.65	@ 3.25
No. 2 strong unbleached	2.50	@ 2.60
No. 1 Kraft	2.60	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.65
Mitscherlich	3.00	@ 3.70
Kraft (Domestic)	2.70	@ 3.30
Soda Bleached	3.35	@ 3.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.75	@12.25
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Coraet Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.85	@ 1.95
Dark Cottons	1.60	@ 1.70
Old Shopperies	1.55	@ 1.65
New Shopperies	1.45	@ 1.55
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.65	@ 1.75
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.00	@ 3.25
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.25	@ 3.50
Hard, White, No. 2	2.75	@ 3.00
Soft, White, No. 1	2.50	@ 2.65
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.65	@ 1.75
Overissue Mag	1.65	@ 1.75
Solid Flat Book	1.50	@ 1.60
Crumpled No. 1	1.20	@ 1.30
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
Manilas—		
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .85
Container	.60	@ .70
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.75	@ 1.85
News—		
No. 1 White News	1.45	@ 1.55
Strictly Overissue	.80	@ .90
Strictly folded	.55	@ .65
No. 1 Mixed Paper	.45	@ .50
Common Paper	.30	@ .35

Clay

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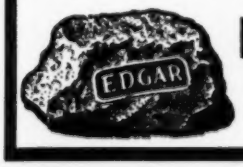

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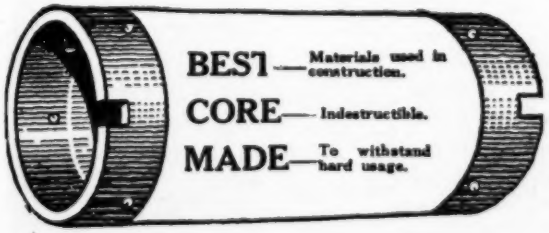

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Elixman Paper Core Company
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Biggs Globe and Cylinder Rotary Bleaching Boilers have become known in every part of the world as standard paper-plant equipment. Repeated installations indicate very positively the complete satisfaction of our old customers.

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Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07½
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¼
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06½
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton— (Delivered Central Territory)			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined— (Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	3.60	@	3.70
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.25	@	1.35
Blanks	1.70	@	1.80
Krafts	1.90	@	2.00
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (oversisue)	.65	@	.75
Old Newspapers—			
No. 1	.65	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks— (F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05¾	@	.05½
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¾	@	—
Straw Board	65.00	@	70.00
News Board	47.50	@	—
Chip Board	42.50	@	45.00
Wood Pulp Board (Carload Lots)	4.50	@	5.00
Binder Boards—			
No. 1, per ton	80.00	@	90.00
No. 2, per ton	75.00	@	80.00
Carload lots	65.00	@	75.00
Tarred Felts—			
Regular	58.00	@	63.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11¾	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	—	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03¾
New Canvas	.08	@	.09½
New Black Mixed	.05	@	.05½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	3.00	@	3.50
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.40	@	1.50
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	—	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.40	@	2.50
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	2.00	@	2.10
Writing Paper	1.70	@	1.80
No. 1 Books, heavy	1.70	@	1.80
No. 2 Books, light	1.25	@	1.40
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.80	@	.90
Old Kraft	2.25	@	2.50
Common Paper	.50	@	.55
No. 1 Mixed Paper	.55	@	.60
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.75	@	.80
Old Newspaper	.50	@	.60

Domestic Rags (Old)

White, No. 1—			
Repacked	4.50	@	5.25
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	.02¾	@	.02¾
Miscellaneous	.02	@	.02¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.80	@	2.00
Black Stockings	3.75	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.40	@	1.50
No. 3	1.25	@	—
No. 4	.85	@	1.20
No. 5A	.85	@	.90
B	.80	@	.90
C	.70	@	.80

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11¾
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¼	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05½	@	.06½
No. 2 Kraft	.03¾	@	.04½
Common Bogus	.02¼	@	.02¾
Delivered New England points			
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp lined board	52.50	@	57.50
Single White, patent coated board bender	72.50	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.45	@	2.55
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.55	@	1.60
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.20	@	1.25
White Blank News	1.40	@	1.50
Old Kraft	2.00	@	2.10
Print Manila	.70	@	.80
No. 1 Mixed Paper	.47½	@	.50
Overissue News	.70	@	.80
Old Newspapers	47.50	@	52.50
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.60
Manila Rope—			
Foreign	3.00	@	3.25
Domestic	3.25	@	3.50
Mixed Strings	.85	@	1.00
Scrap Burlaps	1.50	@	1.60
Scrap Sisal	1.25	@	—
Scrap Sisal for shredding	1.50	@	—
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	—	@	2.00

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09	@	.10
Silesias, No. 1	.07	@	—
New Unbleached	.09½	@	.10
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06	@	.06½
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¼
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.00	@	2.15
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.75	@	1.85
No. 2	1.25	@	1.35
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.60	@	1.65
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.00	@	5.50
New Checks & Blues	4.50	@	4.65
Old Fustians	1.90	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	..	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

Pulp

(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	63.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.11½	@	—
Fancy Shirt Cuttings	.05½	@	—

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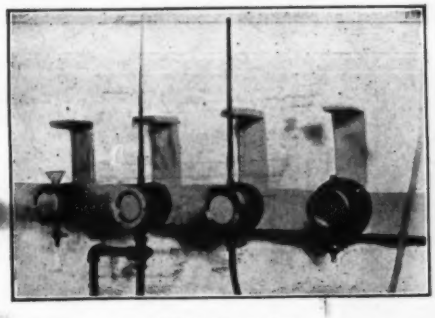

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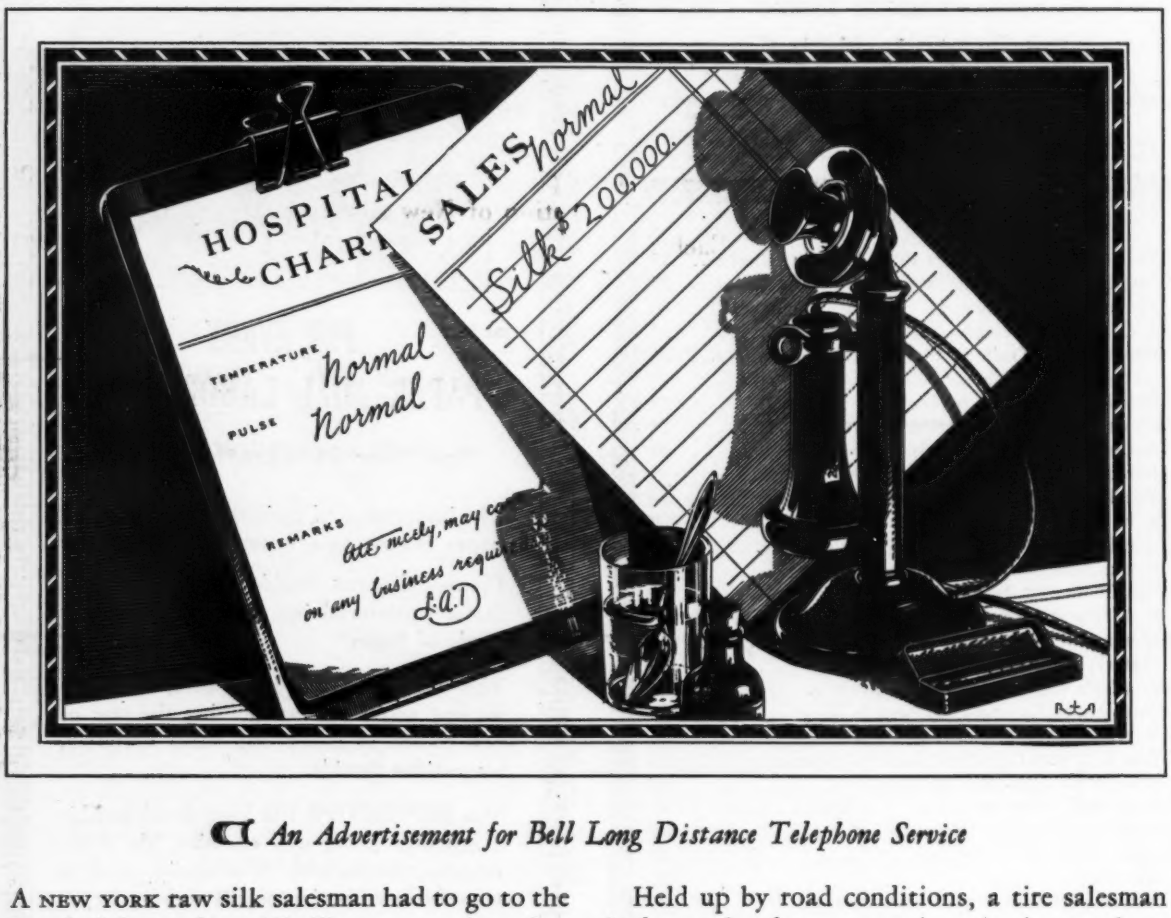

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A NEW YORK raw silk salesman had to go to the hospital for 10 days. His illness was minor, but the loss of time was serious. He secured a room with a telephone. Throughout his convalescence, he kept informed of the course of the market. Sent and received his cables by telephone. Kept in constant touch with office and customers. Sold more than $200,000 worth of silk.

A Milwaukee dry goods salesman was forced to cancel his regular trip because of a broken leg. From his sick-room, he covered in 5 days by telephone the same territory that took 5 to 6 weeks of traveling. And he gathered in 90% of his usual business.

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